

# Preserving our History

the collaboration of green design and historical preservation

Danielle Cremer





# Preserving our History

the collaboration of green design and historical preservation

A Design Thesis Submitted to the Department of Architecture and Landscape Architecture of North Dakota State University  
By Danielle Cremer

In Partial Fulfillment of the Requirements for the Degree of Master of Architecture



Primary Thesis Advisor

05/04/2012  
Date



Thesis Committee Chair

05/04/2012  
Date

May 2012  
Fargo, North Dakota

[non-exclusive distribution license]

By signing and submitting this license, I, Danielle Cremer, grants North Dakota State University (NDSU) the non-exclusive right to reproduce, translate (as defined below), and/or distribute my submission (including the abstract) worldwide in print and electronic format and in any medium, including but not limited to audio or video.

I agree that NDSU may, without changing the content, translate the submission to any medium or format for the purpose of preservation.

I also agree that NDSU may keep more than one copy of this submission for purposes of security, back-up and preservation.

I represent that the submission is my original work, and that I have the right to grant the rights contained in this license. I also represent that my submission does not, to the best of my knowledge, infringe upon anyone's copyright.

If the submission contains material for which I do not hold copyright, I represent that I have obtained the unrestricted permission of the copyright owner to grant NDSU the rights required by this license, and that such third-party owned material is clearly identified and acknowledged within the text or content of the submission.

IF THE SUBMISSION IS BASED UPON WORK THAT HAS BEEN SPONSORED OR SUPPORTED BY AN AGENCY OR ORGANIZATION OTHER THAN NDSU, I REPRESENT THAT I HAVE FULFILLED ANY RIGHT OF REVIEW OR OTHER OBLIGATIONS REQUIRED BY SUCH CONTRACT OR AGREEMENT.

NDSU will clearly identify my name as the author or owner of the submission, and will not make any alteration, other than as allowed by this license, to my submission.

---

Student Signature

Date

[non-exclusive distributive license]

[table of contents]

---





1	abstract
3	problem statement
5	statement of intent
8	<b>The Proposal</b>
9	narrative
13	client description
15	major project elements
17	site information
21	project emphasis
23	plan for proceeding
25	previous studio experience
28	<b>The Program</b>
29	research
37	case studies
55	historical context
63	project goals
67	site analysis
81	program
85	references
89	appendix A
95	personal identification

1]

[abstract]

---



This project, Preserving our History, focuses on the integration of green design strategies, energy efficient design and historical preservation for the purpose of restoring neighborhoods within our city limits. Historic preservation has been on the rise in recent years as a means to embrace the deep and rich heritage of a place. By integrating green design strategies and energy efficient design into the practice of historic preservation, the lifespan of a building can be extended. By preserving these buildings, life is brought back to the site, allowing historic preservation to act as a catalyst for the rehabilitation of surrounding neighborhoods.

The project presents itself as an adaptive reuse venture and mixed-use building in Miles City, Montana. It focuses on the preservation of the decrepit Pacific Northern Railway station along Pacific Avenue and how it may inspire the rehabilitation of the surrounding neighborhood.

key words: historic preservation, adaptive reuse, green design strategies, neighborhood rehabilitation

[2

3]

[problem statement]

---



How can historic preservation work in collaboration with energy efficient technologies to influence the renovation of a neighborhood?

5]

[statement of intent]



## Typology

The driving force for this thesis is an adaptive reuse of an abandoned train depot and its immediate environs for mixed-use purposes. The project directs its attention to urban design as the depot becomes a catalyst to renovate the surrounding neighborhood.

## Claim

The renovation of neighborhoods within a city can be done through the collaborative influences of historic preservation and energy efficient design. The focus for the project is the renovation of a distraught neighborhood that utilizes the reuse of a train depot as its catalyst.

## Premise

- Working together, historic preservation, green design and energy efficient technologies can create sustainable neighborhoods with extended lifespans through the restoration of our existing buildings.
- Historic districts are prevalent in many of our neighborhoods in the United States and contain a rich story of our heritage.
- Historic preservation has been on the rise in recent years, focusing on the restoration of historic structures and districts within our city limits, and "has established itself as both powerful and integral to virtually every community." (Tyler. 2000) At the same time, green design and energy efficient technologies have been increasing in popularity with their use being stressed in the design of new buildings.
- The emergence of a historic renovation project could potentially act as a catalyst for other renovation in a neighborhood.

[6

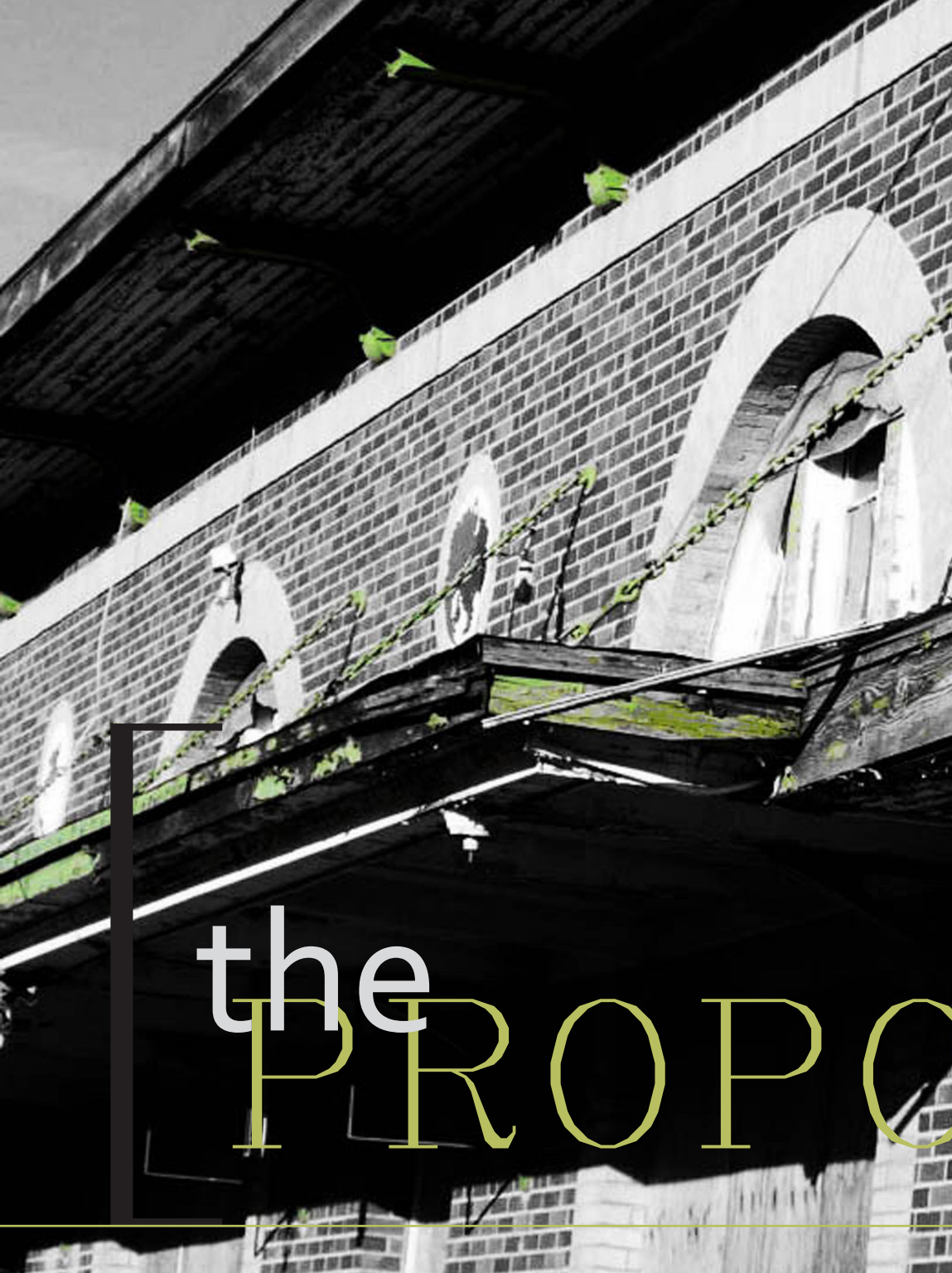
## 7] Theoretical Premise/Unifying Idea

This thesis will focus on strategies to amalgamate historic preservation and energy efficient design for the renovation of spaces, areas and buildings within a city and how these spaces might become catalysts for future renovation.

### Project Justification

There are economic, cultural, social and environmental aspects that make this project imperative to society. Economically, the restoration and rebuilding of a neighborhood provides a market for tourism, bringing people to an area that may not have otherwise been visited. Socially, the community will be brought together to share in the history and heritage the area has to offer. Culturally, the project draws upon the importance of heritage and history of place, reminding society of where we have been. Environmentally, this project focuses on the continual effort to reduce energy consumption through the use of green design technologies and where we are going.





the

PROPOSAL

9]

[narrative]

---



Historic preservation has a long dated past. Some first efforts go back as far as 1816 with attempts to save Independence Hall in Philadelphia from devastation (Tyler, 2000). As time passed, society still saw the importance of older buildings to the community and wished to defend them, bringing about different perspectives on the subject. These perspectives are still around and some are still used when pursuing particular ventures. Through this novel and growing idea of historical preservation groups were organized to make certain that older buildings would always be standing to tell their stories of rich history.

Today, historic preservation is still a popular topic; however, with the changing times and outcry of global warming, building and design technologies have changed. Sustainable and energy efficient design solutions have become the latest craze. Many environmental conscious individuals are jumping on board, while others get left behind scared of the initial upfront cost of implementing such strategies. Programs such as LEED and the 2030 Challenge have emerged from the wood work, providing lists and suggestions on how to create more sustainable spaces and eliminating the carbon footprint a building places on the earth.

It is on the shoulders of this generation to continue implementing and further push these sustainable strategies into the already sustainable act of reusing an existing building. By taking historic preservation in this direction, we will be able to update our buildings with more energy efficient strategies as the economy allows. Incorporating and designing solar panels to fit with the style of the building while being careful and conscious not to attach them to the building façade is but one example. The building will be able to be part of history that continues to grow into the present.

11]

[narrative]

---



The preservation of a historic building, under these parameters or not, will have a tremendous effect on the community and its primary surroundings. The renovation of a project with a great amount of scope and desires could, by plan or unintentionally, become a catalyst for the rehabilitation of the neighborhood, leading the way for other buildings to emerge in the same surroundings in the future. As there are many historic structures that deteriorate within the landscape of our cities and towns, neighborhoods also have the potential of diminishing from our view. It is necessary that we begin to focus our attention on these suffering neighborhoods and view them as holding great potential, allowing them to bring fulfillment back to those living in their midst.

13]

[client description]



Members of the Miles City community will be the primary users of this mixed-use development as locals find a home within the newly constructed apartment buildings and business owners find a home within the commercial offices at street level.

[14]

The Miles City community and its visitors will also become a necessary consideration as the project takes into account their desires and wishes. Only with the help of the community will this area begin to prosper .

The Miles City's Planning Department will be another essential client as the reuse of the train depot prompts the renovation of the adjacent neighborhood. Through the renovation of the train depot, a master plan for the rest of the neighborhood will be established that focuses on the design and materials allowed for future buildings. The further renovation of the neighborhood could be restricted due to economic issues, individuals and businesses in Miles City.

[client description]

15]

[major project elements]



## Apartments

The mixed-use facility will house a variety of one bedroom, two bedroom and loft apartments for individuals looking to start roots in the community or in need of extended temporary living.

## Café

The small café, with the help of the Iron Horse restaurant across the street, will help generate foot traffic to the site by business owners wanting to catch a quick breakfast, lunch, snack or coffee.

## Fitness Center

The mixed-use facility will house a twenty-four hour fitness center focused on strength training and cardio. It will be available to all members of the community.

[16]

## Depot Renovation


The train depot renovation becomes a major deciding principle for the rest of the project to move forward. The depot will be renovated, as suggested by the Miles City community, into office space for the Chamber of Commerce, a visitor center, and a social hall. These elements will also be great factors in bringing people to the site.

## Master Plan

A master plan will be created for the renovation of the neighborhood surrounding the train depot. The master plan will list elements, materials, locations and functional relationships to be present in the future buildings and spaces that will rest in the area.

17]

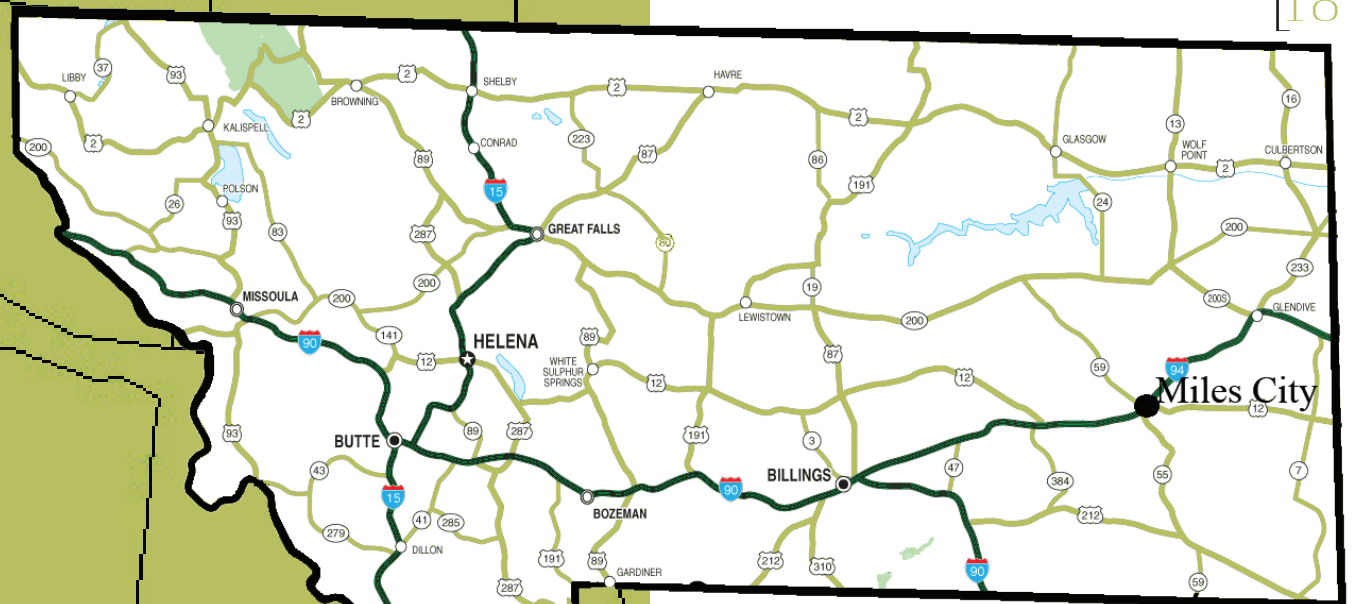
[site information]



Located in the Western United States, Montana is the largest land locked state comprising 147,046 square miles of vastly differing terrain (NSTATE, 2011). The western region of the state is clustered with mountain ranges while the eastern region is encompassed by vast plains.

Miles City, the site for this thesis project, is located on the vast plains and rolling hills of Eastern Montana and is the major hub for the majority of the population in Eastern Montana as rural families make trips to town to visit Miles City's big box retail stores for weekly supplies. As is the same with many smaller cities, Miles City struggles to hold onto its local businesses as big-box stores move in as competition.

[18



[site information]



Located on Pacific Avenue, three blocks off Main Street, the demoralized site offers potential for new growth and life. This thesis will begin to establish a home for local businesses with the renovation of the train depot into the Chamber of Commerce and visitor center and the construction of a mixed-use facility for commercial offices and apartment living. These project elements will join with the list of existing businesses to help the area thrive.

19]



- 1 Northern Pacific Depot
- 2 Iron Horse Restaurant
- 3 Site of New Mixed-Use Development
- 4 Joyce's Antiques & Collectibles
- 5 Allen's Auto Body Shop
- 6 Quad K Supply
- 7 W H Champion Oil Properties
- 8 Computer Solutions of Miles City;  
Tom Clarke Properties, Inc
- 9 Storage Shed
- 10 Jerry's Refrigeration Services, Inc
- 11 Midtown Hair Fashions
- 12 Residential Housing



[20

21]

[project emphasis]

---



It is important for historic buildings to tell their stories within a specific setting. It is also important that we continue to strive and push ahead by using the most recent and updated energy efficient techniques in construction. This thesis project will emphasize the importance of this fact as it endeavors to use the restoration of the historic train depot and the new construction of a mixed-use facility as a catalyst for the rehabilitation of the surrounding neighborhood. Through this rehabilitation, it is hoped that neighborhoods within the community will be brought back to life.

23]

[plan for proceeding]





## Research Direction

Research will be gathered in the following areas: theoretical premise/unifying idea, the project typology, historical context, energy efficient techniques, site analysis, preservation, and programming.

[24

## Design Methodology

Design methodology will be carried out through the Concurrent Transformative Strategy. It will be implemented by concurrently gathering both qualitative and quantitative data as research progresses using the theoretical premise/unifying idea, site analysis and project typology as the guiding principles. Qualitative data will be gathered through observations, community interviews, and journal searches. Quantitative data will be gathered through statistics and analyzed data.

Documentation will be compiled digitally and will be obtainable in this book. The documentation will be easily accessible to other scholars and found in the North Dakota State's Digital Repository. Through the thesis schedule, documentation will be completed at the end of each deadline.

[plan for proceeding]

25]

[studio experience]

---



Fall 2008 . Darryl Booker  
Tea House . Fargo, ND  
Boat House . Minneapolis, MN

Spring 2009 . Joan Vorderbruggen  
Dance Studio . Fargo, ND  
Off-the-Grid Dwelling . Marfa, TX

Fall 2009 . Steve Martens  
Inuit School . Tuktoyaktuk, NWT  
Velodrome . West Duluth, MN

Spring 2010 . Milt Yergens  
"Ice Breaker" Ice House  
Agriculture Research Facility . Goodland, KS  
Biker Bar . Regent, ND  
Culinary Arts School . Fargo, ND

Fall 2010 . Bakr Aly Ahmed  
High Rise Project . San Francisco, CA  
"Precious" Platonic Solid

Spring 2011 . Malini Srivastava  
Passive House Certified Cabin . Itasca, MN & Minnesota State Fair  
MSUM Retrofit . Moorhead, MN  
Migrant Worker Home . Fargo, ND  
Habitat for Humanity . Fargo, ND

Fall 2011 . Cindy Urness  
Minnesota Experimental City . Alexandria, MN







the  
PROGRAM

[28

29]

[research]

---



The Historic Preservation Movement began in the United States with the establishment of two forces: “the National Trust of Historic Preservation in 1949 and the passing of the National Historic Preservation Act in 1966” (Tyler, 2000). These forces were not formed with ease; it was the interest of one private citizen, Ann Pamela Cunningham, and her urge to secure Mount Vernon for preservation that the public and later the government finally jumped on board. At the time, the government was more interested in the procurement of natural features rather than recognizing the significance of historical buildings. Without government support, Cunningham formed a group of women whom campaigned through the entire country for support (Murtagh, 2006). Within five years time, the women acquired Mount Vernon, which still remains theirs to this day.

Historic preservation has been on the rise since its first start with Cunningham many years ago. Society is realizing the importance of these historical visual icons to the city landscape. This research will address why historic preservation is important to society through aspects of cultural psychology and the importance of history. Research will draw on the magnitude of reusing buildings in respects to the earth, the enormity of using energy efficient techniques, and how the reuse of historic building (or any building) can rehabilitate a neighborhood.

The basis for understanding the importance of historic preservation in buildings and its position within society starts with the significance populace places on history itself. In order to understand this significance however, it is necessary to understand the basics of cultural psychology. Cultural psychology studies the relationship cultural factors have with human behavior. Psychologists working within cultural psychology often ask the questions of “how mind is shaped by culture, or how is culture shaped by mind” (Hiles, 1996). Anthropologist Clifford Geertz states:

*[Human] behavior would be virtually ungovernable, a mere chaos of pointless acts and exploding emotions, [our] experience virtually shapeless. Culture, the accumulated totality of such patterns, is not just an ornament of human existence but the principle basis of its specificity- an essential condition of it.*

It is through language, myth, narrative, rituals, art, science, interaction, and social activities that human experience and identity are assembled. It is through understanding these views of cultural psychology that society can begin to comprehend the significance that history has and the role it plays within society.

History lays a framework for society to look upon to understand the events of the past, how to interpret the present and how to influence the future. “History offers a storehouse of information about how people and societies behave.” (Stearns, 1998) It is with this understanding of past societies that the present society can advance with greater knowledge than those that preceded it. It is through history that society is able to evaluate the present events. The past gives individuals of the present a concrete subject to evaluate themselves against. Peter N. Stearns pins a warring nation against a peaceful nation as an example of this evaluation in his essay “Why Study History”. He states that without having knowledge of war, a peaceful nation would never understand a warring nation.



History also forms an identity. It is through history that the roots of a society, country, institution or nation are recognized allowing it to understand its beginnings and acknowledge the growth that has been made since its birth. History also forms an identity for each and every human being. Peter Wehner states that “history also introduces us to ourselves. It connects us to our country, its achievements and failures, its heroes and villains, its ideals and aspirations. It is the sine qua non of democratic citizenship” (Wehner, 2011). It is through the construction of buildings, structures and landmarks that the identity of a place is preserved and kept to continue telling its historical tale as time passes. These historic buildings and their context become visual reminders to society of its past and where it has been. The reminder that historic buildings grant to society and the charm and character they develop within a place become a major factor in the decision to preserve and restore them after their initial use has passed.

It is important to note that the intervention of historic buildings comes in several forms: preservation, restoration, reconstruction, or rehabilitation. The terminology becomes important as each form of intervention follows a different strategy of involvement. “Preservation refers to the maintenance of a property without significant alteration to its current condition” (Tyler, 2000). This guideline starts to form an understanding that a building’s structure changes over time, but with each change, a part of history is maintained. Historic preservation’s purpose is to “mediate sensitively with the forces of change and to understand the present as a product of the past and a modifier of the future” (Tyler, 2000).

The process of restoration involves returning a building to its original condition or to the time period of which it was built. Buildings are often restored to their original condition when significant historical features of the building become lost over time. The decision to restore a building is not done lightly, for returning a building to its original condition stops the progression of the natural maturation of the structure.

Reconstruction is what it sounds like: the reconstructing of a historical building that no longer exists for purposes of context. A building that is reconstructed becomes an exact replica of a building that once existed.

Lastly, rehabilitation refers to the adaptive reuse of a building. It “describes a suitable approach when existing historic features are damaged or deteriorated but modifications can be made to update portions of the structure” (Tyler, 2000). Rehabilitation acknowledges the importance of the historical features of a building while incorporating contemporary additions if needed.

33]

The most sustainable practice in our built environment is the reuse of older buildings (Langston, C.), whether it is in the form of historic intervention or adaptive reuse. It has been the custom of architects, contractors and engineers, however, to tear down old buildings to build new, more energy efficient ones with the notion that the cost of demolition and new construction will be outweighed by the savings in operation costs of an energy efficient building (Frey, 2008). However, this notion is destroying the environment. Statistics currently show that the construction and operation of new buildings, residential and commercial, account for 39% of the United States's energy consumption and 38% of the United States's carbon dioxide (CO<sub>2</sub>) emissions (Buildings Overview (2009 May)). Statistics also show the amount of debris related to building demolition is currently estimated at 25%-40% of the nation's solid waste filling our landfills (American Institute of Architects. 2009 Feb 26). Not only is society producing unnecessary green house gas emissions and wasting a tremendous amount of energy but society is also filling up landfills with unnecessary building material. This round about behavior needs to come to an end as landfills are reaching capacity and global warming has become a major concern. Other research being conducted suggests that "historic and older buildings are actually more energy efficient than buildings of more recent vintage because of their site sensitivity, quality of construction, and use of passive heating and cooling" (Frey, 2008). New construction becomes more appealing as more energy efficient technologies are invented daily, but these technologies can be retrofitted to older buildings to make them even more energy efficient than their design already suggests.

The impacts that building reuse and recycling have are threefold: environmental, economical and social. To reiterate, environmentally we are torturing the earth through our superfluous cycle of build, demolish, build. New construction does not always have to be the answer. With the technologies that are available today, retrofits and adaptive reuses can become eloquent building- sometimes even more eloquent than new construction. Retrofits and adaptive reuse projects tell the story of the building. A fact often misunderstood is that reuse projects do not have to be attached to a historical site or building. Any building can be adaptively reused with the right kind of creativity, proof is found in the 990 Office case studies that follow. The environment also benefits from the recycling of materials and the reuse of structural elements, which reduce the amount of waste that would otherwise collect in our landfills.

*Research conducted in Seattle shows that in 2007, nearly 700 buildings were demolished in order to build new. Taking this number into account and not changing our current practices, by the year 2030, Seattle will have demolished and replaced 82 million square feet of our current building stock in the United States. (2008 Jan 6 Sustainability Initiative)*



The economic impact that adaptive reuse provides is simple; “rehabilitation takes half to three-quarters of the time necessary to demolish and reconstruct the same floor area” (Langston, 2007). This shorter development time reduces several key factors that come into play when talking about construction: inflation and financing. Besides time, the actual construction of a rehabilitation project has an economic impact. “The cost of converting a building is generally less than new construction because many of the building elements already exist” (Langston, 2007). This is given if no large problems need to be overcome such as asbestos removal.

Socially, adaptive reuse can reduce the number of vacant and dilapidated buildings within a community, transforming an area into a more vibrant place for individuals to interact. Adaptive reuse can also restore and provide intrinsic historic values by retaining “attractive streetscapes and provide status and image” (Langston, 2007).

Similar to the aspect of recycling buildings, distraught neighborhoods can be recycled and rehabilitated.

*“Community revitalization and historic preservation are uniquely compatible principles. When used together, they create sustainable, vibrant places to live, work and play. At its essence, preservation-based community development uses existing historic resources-the older and historic built environment-to improve the quality of life for residents of all income levels. Historic preservation can be employed to create and preserve affordable housing, generate jobs, retain existing businesses, attract new ones, increase civic participation and bolster a community’s sense of place” (2011 Community Revitalization. National Trust for Historic Preservation).*

## Summary

Historic preservation has been on the rise in recent years and will continue to grow as society begins to understand the relationship that its identity has with its history. It is society's culture and history that form the ways of life.

The most sustainable practice that can be performed today is the reuse of buildings, whether through historic intervention or adaptive reuse. With more energy efficient techniques and designs, society assumes that new construction would be the best economic decision in terms of weighing demolition and new construction against operational energy usage. Studies show that older buildings may be more energy efficient than new building in terms of site conditions and building orientation.

Society is so wasteful with the resources it is granted today, finding itself in a never-ending circle of build, demolish, build while emitting more greenhouse gases than necessary, using more energy than necessary and disposing of more construction debris than necessary. With landfills about to meet full capacity, a solution needs to be found for this epidemic. The reuse of buildings does not have to be for historical purposes.

37]

[case studies]

---



# [ 990 Offices ]

architect: Rob Paulus Architects Ltd

location: Tucson, Arizona

completion: 2010

gross sq ft: 4292 sq. ft.

990 Offices is an adaptive reuse and urban revitalization project in Millville, a lifeless industrial zone near downtown Tucson, Arizona. The project's beginnings came from architect Rob Paulus, a man who believes in urban infill, adaptive reuse and sustainability, and his wife. Together, they purchased a half-acre lot occupied by a decrepit auto shop that closed its doors in 2008. Through a major renovation, Paulus converted the old auto shop into an office for his firm and one other tenant using every remnant of the existing building in the design of the new office spaces.

[38]

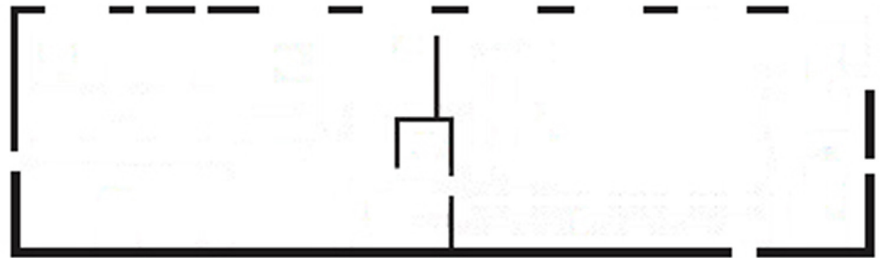
**Program Elements:** The program is split into two commercial office spaces with differing designs: an open floor plan office containing reception, and meeting area, work stations and a walled-off library and traditional corridor-lined offices. Both offices use a shared bathroom.



Mcknight, 2011)

Mcknight, 2011)

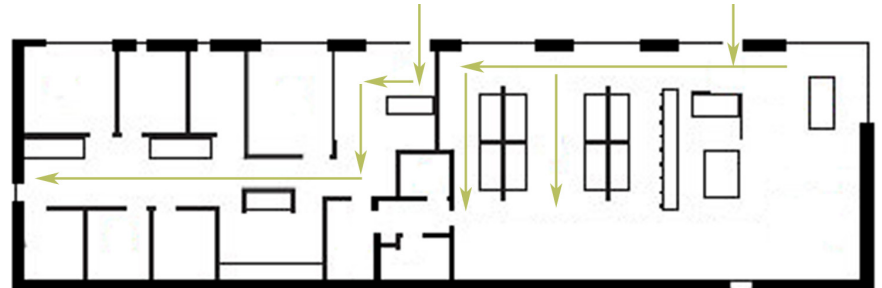
[ case studies ]



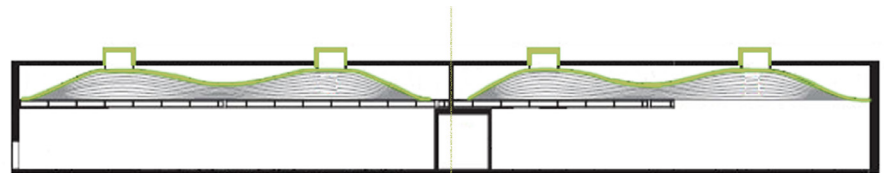
structure



geometry



circulation



hierarchy/ balance



massing





The adaptive reuse of an auto shop makes this project drastically different from others. Rob Paulus had to put extra thought into several aspects of the building to make it more enjoyable and habitable, such as installing heavy insulation in the walls to block out heat, replacing garage doors with windows and installing clerestory windows to allow natural light into the building. His undulating wooden ceiling panels also bring on a different and interesting character to the space. Paulus's idea of not demolishing or trashing anything taken from the original auto shop led to the creative design and construction of a fence made from the remnant garage doors and extra structural steel, flower boxes created from the original roof overhang, and a mosaic concrete path created from the broken up concrete removed from the site.

Similarly, however, this project matches with many other office buildings in terms of program. The office spaces entail reception desks, meeting areas, work stations, a library and a break room.

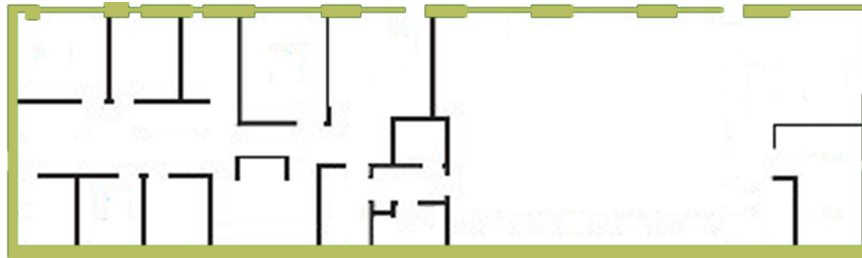
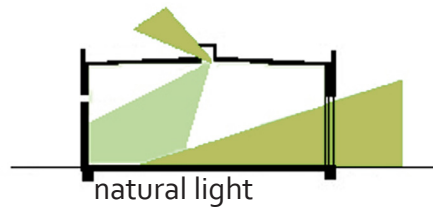
990 Offices has made a great impact. Environmentally, Rob Paulus's design has brought life back to the site without further damaging the earth. [40]



Mcknight, 2011)

#### Distinguishing Characteristics:

An undulating wood ceiling made from pine plywood moves through both office spaces, giving warmth to the otherwise dark rooms. The fence around the outdoor living area is made from the old garage doors of the auto shop.



plan to section

Paulus's creative thinking about materials and the reuse of what was already on the site saved him from harvesting and introducing new materials while disregarding others. Socially, the 990 Offices as well as other projects he completed in the neighborhood have allowed people to meet and socialize. The outdoor space that he designed along with the 990 Offices is one example of a place for meeting and socializing. He brought life back to the industrial and decrepit part of town through his revitalization efforts. Culturally, he paid attention to the existing conditions of the site and respected its history of the site. He proves this through his plan of reusing the auto shop rather than demolishing it. Politically and economically, he brought business to an area that was falling to shambles, giving the community a reason to stop at the site rather than just pass by.

990 Offices becomes a vital research tool for this thesis in three major ways: programmatic requirements, adaptability and sustainable techniques. The elements that Rob Paulus took into account to revitalize the neighborhood in Millville through several adaptive reuse projects are the same elements that this thesis will need to take into account, as this thesis also focuses on adaptability and the rehabilitation of a neighborhood. The sustainable features that Paulus incorporated to make the auto shop more habitable follow the same line of creativity that many designers need to use. The features will greatly influence the design decisions that need to be made for this thesis.





# [ Gentry Library ]

architect: Marlon Blackwell

location: Gentry, AR

completion: 2007

gross sq ft: 11,970 sq.ft.

The Gentry Library is an adaptive reuse project located in the downtown district of Gentry, Arkansas, a small community that struggles to keep its downtown thriving. The library, which took seven years to complete, has become the “cornerstone of the revitalization” of Gentry’s downtown district (Kolleeny, 2008). The community, in need of a library, saw the potential in reusing the former hardware store, a century old brick building with no historical or architectural significance, as the solution to their problem. Although the building had no significance to an outsider the building was cherished by many local residents, and Marlon Blackwell, the architect heading the project, was able to enhance the brick structure through simple design solutions.

[42]

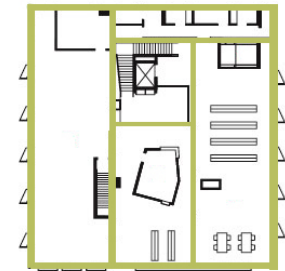
**Program Elements:** The program contains space for a public library, community room, a city history and genealogy collection, and a park.



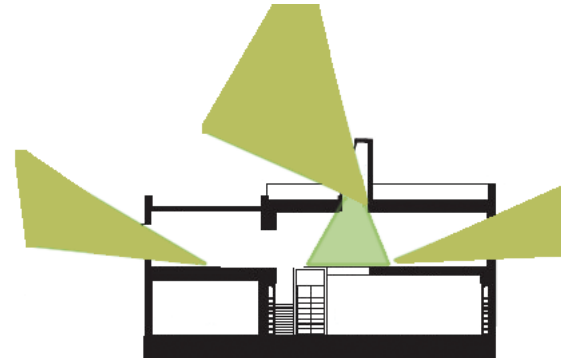
(Kolleeny,2008)

(Kolleeny, 2008)

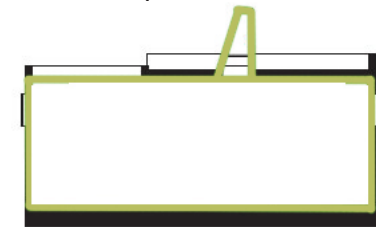
[ case studies ]



geometry



natural light



massing

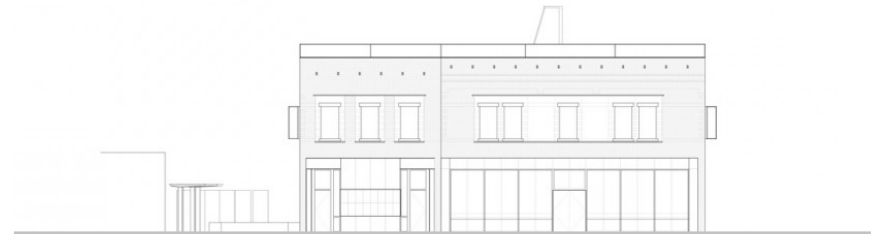


hierarchy



The Gentry Library is different from many other cases in terms of programmatic requirements and design but relates well to other small library projects. The simple design moves made by Marlon Blackwell also set this case aside from the others as drastic transformations were not made in regards to the reuse of the insignificant building; the modest library fits the small town of Gentry, Arkansas and relates well with its surroundings. This project, on the other hand, is similar to other cases in terms of its ability to help in the revitalization of Gentry's downtown district. The community realized that their need for a library could become a savior to their downtown because downtown was being abandoned by businesses that were no longer flourishing.

The Gentry Library made an environmental, social, and cultural impact in regards to the site. Environmentally, the library extended the life of distraught and abandoned building, relieving the environment of its demolition and new construction. Socially, the library and its adjacent



[44]

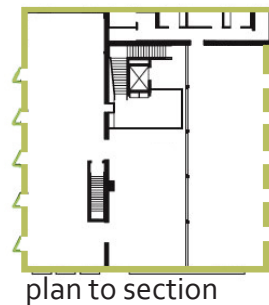


**Distinguishing Factors:** The steel and glass volumes encase the existing openings on the front/south façade of the building to accentuate the existing brick ornament; the light wells on the west and east façades capture light and bring it into the building. An outdoor pocket park.

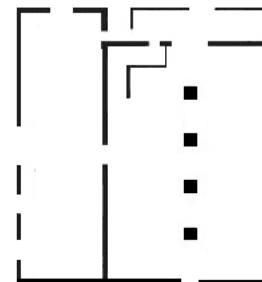
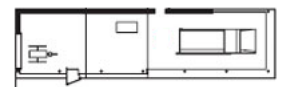
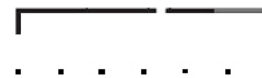
[case studies]

park give the community a place to gather for events individually. Culturally, the reuse of the hardware store restored something precious in the town of Gentry and is helping bring people back downtown.

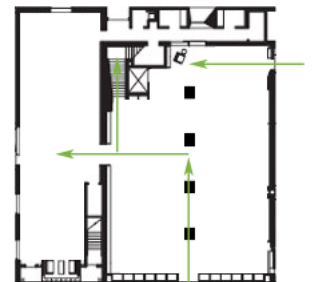
In regards to this thesis the Gentry Library solidifies the fact that small steps can be taken with the help of community efforts to stop the progression of desolation in neighborhoods and downtown districts. The reuse of the hardware store brought people back downtown and may have sparked the design of another project for downtown Gentry, Arkansas. Besides the revitalization efforts of the Gentry Library, other lessons can be learned from this case even though the programmatic requirements are not similar. The simple design decisions and passive strategies used by Marlon Blackwell prove that reuse of a building is and can be elegant without a major overhaul.



plan to section



structure



circulation



# [ Formosa 1140 ]

architect: Lorcan O'Herlihy Architects

location: Culver City, CA

completion: 2009

gross sq ft: 16,000 sq ft

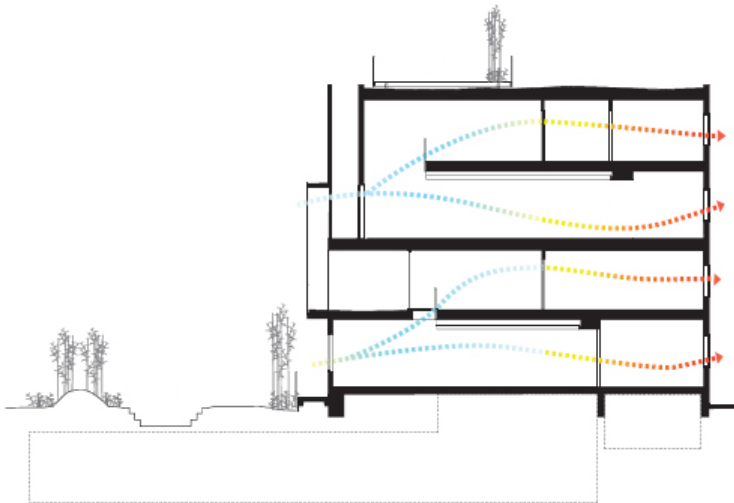
Formosa 1140 is an eleven unit condominium in West Hollywood that was designed with public interaction in mind. Lorcan O'Herlihy, the architect for the project, observed that Los Angeles needed to become more public with its outdoor spaces in contrast to its known privately tucked away internal courtyards. From the beginning of the project, O'Herlihy and his developer Richard Loring decided that it was necessary to break down the private-to-public boundary and design a larger outdoor space for resident and public use. Although the main intent was building condominiums, the outdoor space was the greatest design factor influencing the project.

[46]

**Program Elements:** The program contains 11 apartment units including two-bedroom and three-bedroom arrangements, an underground garage able to house 23 cars, and outdoor greenspace.



(Pearson, 2010)



Formosa 1140 is like many other apartment complexes in program, containing a variety of two bedroom and three bedroom apartments, each with its own small outdoor space and underground parking. The facility provides all that a dwelling unit would need to be sufficient; however, there are elements that set it apart from other dwelling units of its kind. O’Herlihy and Loring focused on the outdoor space with every decision made in regards to the indoor space and façade of the complex. The connection of the outdoor spaces to the indoor spaces was important and needed to be portrayed.

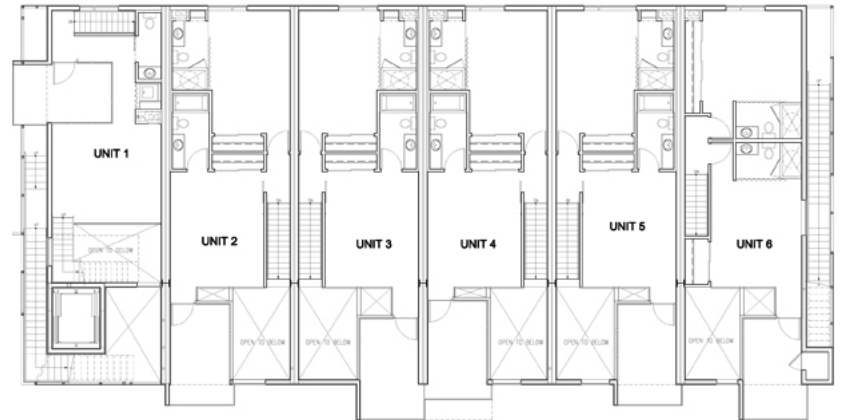
Formosa 1140 responds to the site in several ways. Environmentally, the facility brings more vegetation to the area through the public pocket park, reducing the amount of asphalt and concrete on the site. Formosa 1140’s sustainable features also influence the site environmentally by cutting down on heat entering each dwelling unit, and decreasing the amount of air conditioning needed throughout the day. Socially, Formosa 1140 has broken the boundary between public and private, giving people a place to gather and socialize with its pocket park and shared roof top patios. Culturally and economically, the apartment facility begins to pull from urban development by focusing on the density of an area rather than sprawl, keeping businesses and residential units within walking distance and readily accessible.





(Pearson,2010)

Formosa 1140 becomes a vital research tool for two reasons: programmatic requirements and site design. Formosa 1140 focuses on multi-family dwelling, similar to this thesis, and it is important to take into account the unique relationships that O'Herlihy and Loring created while using the outdoor space as their main design informant. The relationships that were created are different from other apartment complexes, making this project distinctive and important to mention. Besides the programmatic requirements, O'Herlihy and Loring's decision to use the outdoor space as a way of designing greatly influenced the design of the site and exact placement of the apartment complex on the site.



(Pearson,2010)



(Pearson, 2010)

#### Distinguishing Factors:

The red and orange corrugated, solid, and perforated screens were layered for aesthetic and sustainable reasons; the orientation of the facility on the outer edge of the lot allows space for a pocket park.

# [ NP Depot restoration ]

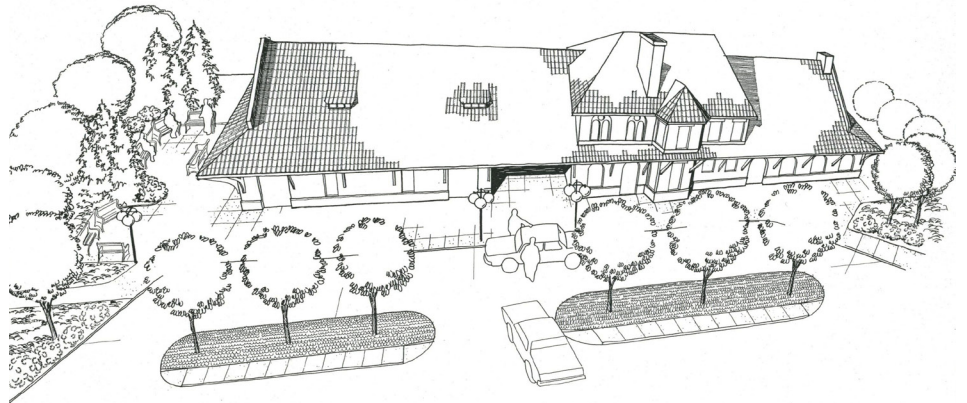
architect: Mutchler, Twichell & Lynch

location: Fargo, ND

completion: 1975

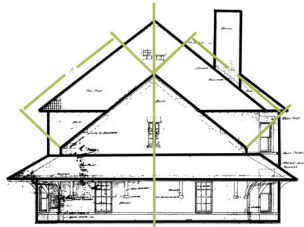
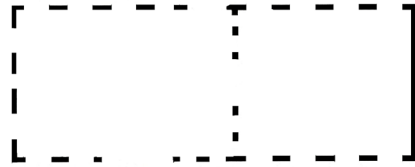
The Northern Pacific Depot is an adaptive reuse project in the historic downtown district in Fargo, North Dakota. In 1971, the City of Fargo was granted ownership of the depot and the grounds that it sits upon. The historic landmark was preserved and the interior restored, allowing the Fargo Senior Commission and Senior Center and Fargo Park District to move into the newly renovated depot. Apart from the renovation of the inside of the depot, the community banded together to renovate the exterior park and gardens on the grounds allowing community members and businesses to buy individual bricks to pave the area. Today, the names of those that bought bricks during the renovation of the grounds are engraved within the paved walks.

**Program Elements:** The program contains office spaces for the Fargo Park District and Senior Commission, a gathering area and rec area for the Senior Center, a library, a conference room, a kitchen, a youth area with a craft area, a music room, a rec room and a tv room, and a historical gallery space.

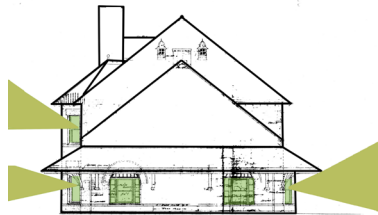




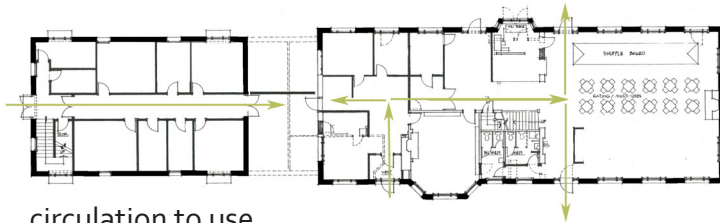
structure



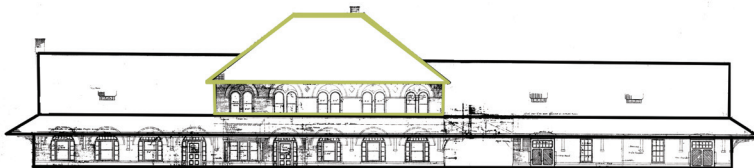
geometry/ balance



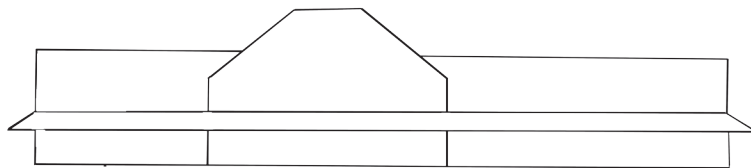
natural light



circulation to use



hierarchy



massing



The programmatic requirements of the depot restoration project may differ from other cases being studied; however, the relationship between the spaces can still be studied. The adaptive reuse and restoration aspects of the project make the connection between this case and others. The depot is the first case to be studied that brings in the supplementary element of it being on the National Register of Historic Places. The added element makes for more design conscious decisions.

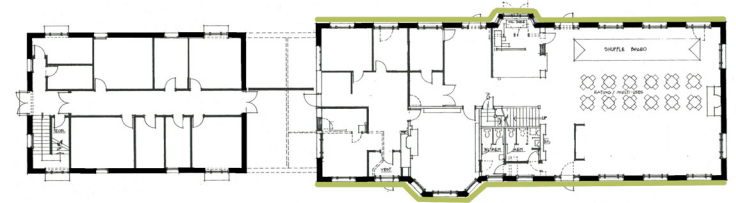
The Northern Pacific Depot restoration responds to the site environmentally, socially, and culturally. Environmentally, the restoration project gave the old historic depot a second chance and sustainably recycled the building. Socially, the senior center at the interior of the depot is a place for gathering. At the exterior, the depot park gives passersby a chance to gather and socialize. Culturally, the restoration of the depot saved a part of Fargo's history, as the railroad marked the beginning of Fargo as a city.



#### Distinguishing Factors:

The development of the outdoor space with engraved walks from community members and the original features from the historic design by Cass Gilbert are the projects distinguishing features.

The depot is an important case to research since its beginnings reflect the beginnings of this thesis. It is important to note the historic context of the project and its relationship to the surrounding buildings and spaces. The depot also offers insight to site design. This will be an important aspect to follow up on as it will become a vital element in this thesis for the movement of people through and around the neighborhood.



plan to elevation

## Summary

With designers, there is a natural need to build new, to create the next masterpiece, the next big thing. It is an inherent desire as their minds become flooded with ideas just from walking down the street. However, the abandonment of structures throughout the United States and the dishevelment of once vibrant neighborhoods need to become a major concern for designers and community members. As “new” is built into our culture, “reuse” needs the same attention. The great ideas and creativity that go into the process of building and designing new structures can go into the reuse of existing structures to reverse this abandonment and revitalize the neighborhoods that are failing.

The cases that were studied, each located in a different part of the United States (Arkansas, Arizona, California and North Dakota), deal with the revitalization of disheveled neighborhoods and downtown districts. It can be concluded from the differing locales that abandonment is a problem that haunts many of our neighborhoods looking for a savior to revitalize them. The aspects of revitalization and adaptive reuse are the reasons these cases were studied, drawing a strong connection to the theoretical premise and unifying idea of this thesis. Each case brings a different solution forward in terms of the revitalization of its surrounding neighborhood. The 990 Offices architect, Rob Paulus, found beauty in a distraught industrial area and began designing, adaptively reusing the abandoned spaces to create a neighborhood that could be called home again. He took it upon himself as a member of the community to make the revitalization his problem and solution. The Formosa 1140 project focuses on the private and public relationship with the surrounding neighborhood, revitalizing in terms of bringing visitors to the site. The Gentry Library and Fargo Depot were community focused revitalization and adaptive reuse projects.



The four cases studied are drastically different programmatically from each other and some drastically different from the program of this thesis, but they can still be learned from. The importance of relationships between spaces, public to private, indoor to outdoor, the sites in regards to the rest of the neighborhoods are aspects that can be taken from these cases. Formosa 1140 focuses on the design of the site and its relationship to the rest of the neighborhood. The Fargo Depot brings community involvement into the design and restoration of the depot park in an intriguing way, allowing the community to feel like the depot belongs to them.

These cases provide many links to creative thinking and how sustainable and technical systems can be incorporated into the design process: heavy insulated walls to block heat, windows on the north façade for views without direct light, panel systems to block direct sun on the façade of the building, etc. It will be important to take into account the fact that the sustainable systems that each project focused on may only pertain to that site and location. Climate will play a major role in the decision of the sustainable and technical systems for this design thesis.

55]

[historical context]

---



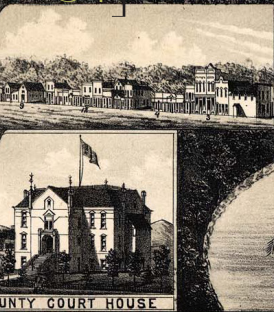
## Inhabitants of the Land

Long before Miles City was ever established, the land was occupied by aboriginal tribes thousands of years ago. Pictographs and medicine wheels found in the area confirm their existence. However, nothing more is truly known of the inhabitants that once walked the land. Native American tribes arrived centuries later to hunt the buffalo that were native to the area after being pushed west from settlers in the east. The Northern Cheyenne, Crow, Hunkpapa, and Ogalala Sioux are the most notable tribes to use the land within Custer County as their hunting grounds. However, slowly the tribes also disappeared from the area as the United States military began their trek into Custer County.

[56]

The ending of the Battle of the Little Bighorn marks the first beginnings of Miles City as permission from Congress was granted for a fort to be built on the Tongue River, known as the Tongue River Cantonment. Construction on the fort was completed in 1876 and was under the command of Colonel Nelson Miles. As time passed, the cantonment was moved two and half miles up the Tongue River, the present day western Miles City (Easton, 2000). The cantonment was named Fort Keogh in honor of Captain Myles Keogh, who died in battle during the Battle of the Little Bighorn.





Illustrated by J. J. Stone, Madison, Wis.

- A County Court House.
- B Presbyterian Church.
- C Catholic Church.
- D Methodist Church.
- E Episcopal Church.
- F Saw Mill and Lumber Yard, L. C. Currier.
- G Brewery.
- H Inter-Ocean Hotel, MacQueen & Young, Props.
- I First National Bank.
- J Stebbins, Mum & Co., Bank.
- K The Yellowstone Journal, daily and weekly.
- L United States Land Office.
- M Wm. Courmay's Real Estate Office.

# BIRD'S EYE VIEW OF MILES CITY C.S. OF CUSTER COUNTY MONTANA 1883

Copyright 1883 by J. J. Stone, Madison, Wis.

- N Livery Stable, Ringer & Johnson, Props.
- O Harness Shop, Ernest Goettlich, Prop.
- P Harness Shop, Konrad Schmid, Prop.
- Q Walker A. Burleigh, General Merchandise.
- R T. B. Burleigh, Hardware.
- S C. W. Savage & Sons, General Merchandise.
- T Miles & Storeville, Hardware.
- U I. Orschell & Bro., Clothing.
- V Leighton, Jordan & Co., General Merchandise.
- W G. McLaughlin, Blacksmith and Carriage Shop.
- X Kitties' Place, Kitty Hardyman, Proprietress.
- Y Park Saloon and Palace Restaurant.
- Z Tivoli Saloon.
- AA Daily and Weekly Press.



Back & Paul, Lithographers, Milwaukee.

9428  
.M5  
1883  
.5

<http://miles city.com/History/>

historical context



## The Town Called Miles

The result of the Tongue River Cantonment and General Nelson A. Miles's ban on alcohol in the fort was the establishment of Miles or Milestown, named after the stubborn general. The town began to boom with brothels and saloons as Miles's soldiers searched out the ladies and liquor (Easton, 2000). The town was in full swing and notorious for cowboys, liquor and gambling. Then late in 1877, General Miles decided to reduce the size of the military reservation, opening more land for people to sprawl onto; with the sprawl of people came the founding of two distinct sections of town, now referred to as Old Miles (Old Town) and New Miles (New Town) (Easton, 2000). With more people settling into Milestown came the need for other services and more merchants, saddle shops and laundry houses, and in with the first rush of new services came others. By 1881, Milestown was home to 42 saloons and 1,000 bottles of beer were being consumed per day. The railroad was also established in 1881, bringing new passengers to the wild, but respectable town (Easton, 2000).

During the time of Milestown, Main Street began more than two blocks west of the Olive Hotel, presently located on the corner of Main Street and South 5th Street. Park Street, known today as South 5th Street, was lively with a wide array of businesses and active with rowdy, liquor drinking men. The present day Natural Oasis and Cook Lake were still part of the Tongue River and today's location of Connor's Stadium would have been across the river.

[58]

## Coming Down the Tracks

The establishment of the railroad in Miles didn't happen overnight; it took the lobbying efforts of Dr. Samuel Barlow in Massachusetts to get the ball rolling, but even that wasn't enough. Dr. Barlow dreamed of having a railroad line that connected New York City to the Columbia River. It wasn't until about 14 years later that a man by the name of Asa Whitney drafted a bill to send to Congress. He was interested in a rail line being constructed from Lake Michigan to Puget Sound. The bill was shot down, but the idea was planted like a seed in the minds of all the congressmen. Word of the transcontinental railroad was caught by Secretary of War, Jefferson Davis, who thought fondly of the idea and later wrote a provision for the Army Bill of 1853 stating to "ascertain the most practicable and economical route for a railroad from the Mississippi River to the Pacific Ocean" (Allison, 2010). From that point, a series of expeditions were undertaken to find the best route for a transcontinental rail line, finding that both the Missouri and Yellowstone Rivers contained valid paths of travel. The government was in turmoil at the beginning of the 1860's from effects of the Civil War, causing another hindrance in the thought of constructing a rail line because funds were proving difficult at the time (Allison, 2010). It was with the discovery of gold in southwest Montana that Congress was finally pleased to sign the bill for the construction of a transcontinental railroad. It was 1862.

[historical context]

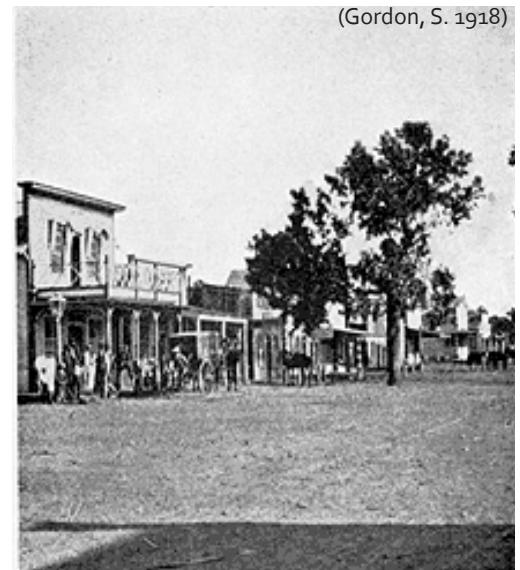
*"Naturally Milestown set out to celebrate the occasion with befitting ceremony. We knew they were laying about a mile of track a day and when they reached Dixon's bluff we had our reception committee organized and at work. The reception was a failure. The only time, up to that date, that Milestown had failed to pull off a public function with due éclat. The committee had done its work well. There were washtubs full of sandwiches, kegs of beer on tap, pails of dill pickles and many other snicks and snacks that we supposed the track crew would relish and appreciate and certain eminent citizens were even loaded with "remarks" on "the potentiality of this significant occasion," but they never got a chance to uncork. From the time the track-crew came in sight at the Main street crossing -- which was about noon -- they did much better than a mile a day and were over the Tongue River bridge before dark of a November day. They didn't pass us by wholly unnoticed; the men all got a bite and a sup, but the boss of the crew was crowding his men for a record; at least that was what he said, but the truth probably was that he didn't want them to get "jagged" on him and so our big occasion petered out and we had to turn to and eat our own sandwiches and drink our own beer, which wasn't as hard on the populace as the choking off of those torrents of eloquence was on the expectant speakers. The one thing to be pleasantly remembered about this occasion was the big black horse that drew the iron car who knew his business as well as any of the humans he worked with and there were some skilled trackmen on that job. That was in November 1881."*  
 --Samuel Gordon 1918



(Gordon, S. 1918)



(Gordon, S. 1918)



(Gordon, S. 1918)



The arrival of the Northern Pacific Railroad in 1881 established Miles City as an important transportation hub in southeast Montana and connected it to a reliable source for the shipment of freight and people (Allison, 2010). Through the late nineteenth and twentieth centuries, Miles City began to boom, placing a “new geometry to the city grid” as settlers began to build parallel to the newly constructed rail line instead of orienting themselves to the existing grid set up by Fort Keogh (Allison, 2010). The Northern Pacific Railway Company promoted as much as they could to get people to travel to the west. They “developed misleading exhibits, scenic posters, and pamphlets based on half-truths to draw settlers to the semi-arid western lands” (Allison, 2010). During this time the population of Miles City doubled from around 600 to 1,200 people and Northern Pacific had hit its peak. The rail line was in need of a new and larger depot. January 18, 1924, marked the completion of the new Northern Pacific depot:

*“Presenting an appearance so beautiful and complete as to surprise and gladden the hearts of those old-time Miles City boosters who have been striving for thirty-odd years to encourage the Northern Pacific to construct a passenger station in keeping with the size and future expectations of this city, the new depot, on the occasion of the dedication of that splendid edifice on Friday, was the subject of a great deal of favorable comment”*  
(Miles City Daily Star, January 18, 1924).

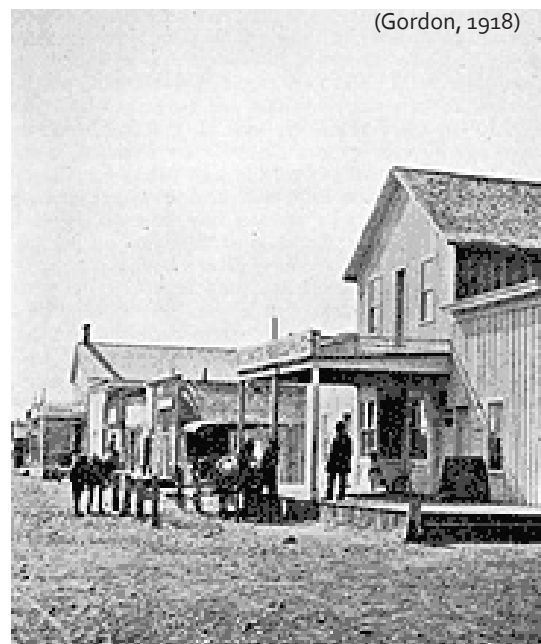
Then in 1923, the mass migration of people in to Montana ended with the rains. Soon to follow was the dust bowl and Great Depression. Northern Pacific and the rail lines remained the main form of transportation during those tragic times. When the rains began to fall again and the tension from World War II had lifted, there became a major decrease in passenger service as people had more of a personal reliance on their automobiles (Allison, A. 2010 Apr).



(Gordon, 1918)



(Gordon, 1918)



(Gordon, 1918)

Passenger service continued to decrease, forcing the Milwaukee rail line to stop its passenger line, and allowing Pacific Northern to pick it up and continue on for a while longer before merging with Chicago Burlington & Quincy, Great Northern, and the Spokane, Portland and Seattle railroads to become Burlington Northern. Functioning under this name, the rail lines only remained a short while longer before the passenger service was ceased. The Pacific Northern depot housed AMTRAK for a short time until it too closed its doors in 1979, leaving the depot empty. The building was acquired by Burlington Northern Santa Fe Railway Company through mergers and has been sitting vacant since 1990 (Allison, 2010).

Today, the depot remains empty with Burlington Northern Santa Fe Railway Company still in control of the land it rests upon. Many organizations and individuals have been interested in preserving the depot but have not found a way around Burlington's unpleasant and unfriendly lease, leaving the building to deteriorate. The Miles City Historic Preservation Office is still trying hard to acquire the land and building from Burlington Northern so that the buildings beauty can be enjoyed by the community. Feasibility studies have already been conducted and structural engineers are impressed with how well the building has held itself together all these years.



63]

[project goals]

---





[64

In my time at North Dakota State University, I have made great friends, shared many memories, been involved with campus organizations, and have grown as a person. I have learned many things in studio as well as outside of studio to help me prepare for the next step in life. Finally, my last year has arrived, bringing with it the last opportunity for me to design something that I can be truly proud of before I hit the road in search of a firm that is the right fit for me. With my final architecture design thesis in progress come three goals: academic, professional and personal.

[project goals]

65]

[project goals]

---



Through my academics, I have had a love hate relationship with the field of architecture but always return to the passion I have for design. My blood, sweat, and many of my tears have gone into my projects throughout the years, and I do not expect anything less from my design thesis as I push myself to go beyond the bounds I have hit in my prior years. Through my collected knowledge, I hope my thesis will inspire those that come after me and the information gathered will be utilized by those inside and outside the architecture department.

In the professional world I want to combine my passion of historic places, urban design, and sustainable systems to create a fulfilling life. Through revitalization and preservation, I want to capture the history of those that lived before me. My design thesis will hopefully mark the beginning of this passion as I demonstrate my abilities to those in the professional community.

[66]

My personal life has become that of an architecture student: living, sleeping, and breathing architecture. As I move forward into my thesis and then onto greater passions in the professional world, I will hold onto everything that has brought me to this point in time. It will be through my experiences, my trials, my celebrations and my courage that I will keep pushing forward to test myself and the designer that I want to become. It will be through time that I will find my true placement in the world, but until then I have high hopes of designing my heart out, whether that be solely through the field of architecture or through interior, clothing or furniture design. Design will encompass everything I do.

67]

[site analysis]

---



## Narrative

The Northern Pacific Depot sits solidly in place, green paint peeling from the wooden trim, windows boarded up or shattered, wooden slats falling away from under the overhang, blue and red paint peeling from the Burlington Northern yin-and-yang symbol centered between the windows. Pigeons flutter in and out of the overhangs, where they have nested and made their home. A slight breeze wisps around the distraught and desolate train depot as the sun tries to peak through the clouds maintaining a cool and crisp morning. The driveway leading up to the depot is broken and cracked, allowing water to puddle at its edges. The surrounding vegetation glistens as water droplets cling to the blades of grass, leaves of trees and small shrubs on the site until the sun finally breaks through the clouds, warming the grounds and evaporating the water. The site is silent; a slight murmur travels over the site irregularly as trains pass by with great clatter. Minutes later, laughter and cheers erupt from the playing fields, Tedesco Park, to the west echoing over the site as parents applaud and encourage their children during their Saturday morning football games. With the explosion of cheers comes a wave of traffic traveling down Pacific Avenue and passing the site in order to reach their destinations.

[68]

Northeast of the train depot, the pavement ends and an empty lot sits: the Burlington Northern mechanical shed located at the far edge is nestled next to the train tracks. A large pile of broken up concrete sits forgotten in the middle of the otherwise empty lot. Tire tracks make a prominent design in the muddy lot as they continue on to the adjacent lot. Continuing northeast, more business come into view: Simpson Honey Farms and Deluxe Motors.

[site analysis]

Southwest of the train depot, an asphalt parking lot leads to the Iron Horse Supper Club's front doors. A tan stucco building with mauve accents to mark the front door where a canopy drapes down to shield customers entering and exiting the establishment. A large metal train statue sits firmly on the front lawn of the restaurant. A fence attached to the building blocks any further views to the southwest, but I know a privately owned shop made of unpainted corrugated metal is located directly behind the stucco building.

Wandering behind the train depot and sinking into the soft and sandy top soil, I am stopped by the train tracks that continue on endlessly; a bridge comes into view to the southwest, telling me the tracks still continue although my eyes will not let me focus. On the other side of the tracks sit barren lots littered with Burlington Northern equipment, wrapped packages, railroad ties, and miscellaneous objects. Looking past the clutter, a residential block comes into view and continues southeast as far as my eyes will let me believe.

Across Pacific Avenue, a brick building housing Joyce's Antiques and Collectibles blends into the vegetation as unkempt tree branches protrude across its face. Small statues, lawn ornaments, and wagon wheels blend into the unkempt grasses and landscape rock housing under the great sheltering tree branches. The sidewalk is cracking and slowly chipping away. The shop looks desolate unlike its residential use located to the back side where a small light above the door remains lit, but still no individuals make their presence known as they remain inside their closed doors.



From the turn in the depot driveway panning SW to NW

To the east of the small deserted antique shop, mounds of old rusted, dented cars and their miscellaneous parts fill the lot. Lawn mowers, four wheelers and motorcycles also are visible and all directing their attention to them and their disassembled parts and away from the crumbling building. The small auto body shop appears to be clad with shingles, many chipped and missing, with a dark black substance splattered across the façade. The false façade on the front of the building is visible from the rear of the building, with its wooden boards crying to be covered or refinished. The gutter that hangs along the back of the building comes to an abrupt end and is severed; its other half lies in the pile of rubbish.

Traveling further northwest on South 5th Street, Riverside Park and its canopy of trees snatches my attention. Walking along the sidewalk, the ground steadily slopes down and continues into the undulating grassy hills distinctive to the park. Three boys greet me as I walk by, showing me their tricks as they drop their bikes down into the undulating park and picking up speed and swiftly gliding from the park boundary to its opposite edge. Peering through the trees, a farmers market can be seen on the opposite edge of the park; community members sell their homemade jams, jellies, relishes, squash from their gardens, and pickled beans.

[70]



From the center of the depot driveway panning NE to N



- 1 Northern Pacific Train Depot
- 2 Iron Horse Supper Club
- 3 Joyce's Antiques & Collectibles
- 4 Quad K Supply
- 5 W H Champion Oil Properties
- 6 Computer Solutions of Miles City;  
Tom Clarke Properties Inc
- 7 Storage Sheds
- 8 Storage Shed
- 9 Main Street Business Services Inc
- 10 Abandoned building
- 11 Pedal Power Sports
- 12 Apartments
- 13 Woods N Goods Thrift Store
- 14 Automatic Transmission Systems
- 15 Jim's Body Shop
- 16 Abandoned Building
- 17 RJ Auto Shine (Abandoned)
- 18 Residential Living
- 19 Jerry's Refrigeration Service Inc
- 20 Midtown Hair Fashions
- 21 Allen's Auto Body Shop
- 22 Privately Owned Shop
- 23 Burlington Northern Shed
- 24 Simpson Honey Farms
- 25 Deluxe Motors









## Human Characteristics

Located in city limits, the site is accustomed to human intervention and use. The train depot, cherished by the community, attracts visitors gazing upon it as it falls to shambles before them. A small and simple sign reading "save" is found tacked to the boarded up windows. Upkeep is still maintained on the grounds; trees are trimmed and the front lawn is always well groomed. The businesses to the east and west of the train depot also attract visitors, many using the driveway of the depot to enter and find parking. Across the street, a small antique shop is hidden by unkempt trees and plants. A quickly built and inexpensive addition made to the existing brick building shows signs of life as vehicles make their way in and out of the attached multi-car garage. The site is a well traveled route by bikers, as car travel is less dense, allowing bikers the freedom of the street.



## Light Quality

73]

The light quality on the site depends on the time of day and the time of year since the sun is the main source of light for the site. During the summer months, the large trees on the site are the only escape from the sun's intensity. The large trees produce diffused light as the sun tries to push its way through the large leafy branches. During the winter, the sun's intensity diminishes and the large trees lose their leaves, letting the total light available pass through the barren tree frames. At night, the site is dimly lit with yellow light from the irregularly spaced light poles along the site and flood lights from neighboring buildings.





Base Map: utilities  
and boundaries

[74

[site analysis]

## Traffic: pedestrian and vehicular

Traffic on and around the site is fairly scarce aside from the residents that live in the area and the basic passersby making his or her way from point A to point B. However, Pacific Avenue becomes a fairly traveled road during the summer months because it connects downtown with the fair grounds and Spotted Eagle, a popular swimming hole, on the other side of the river. Pedestrian traffic is fairly common as walkers, joggers, and bikers use Pacific Avenue to connect with the bike path that loops around the fair grounds.

75] Historic downtown Main Street, located 3 blocks from the site, is the main route through town connecting with I-94 and providing access to the public library, court house, and historic preservation office along with many other hometown businesses. Pedestrians are common on the walks of Main Street during office hours as well as Friday and Saturday nights since people frequent the five bars along its edge.

Bridge Street, located one block off Main Street, is the main truck route through town.

— Pedestrian Traffic  
— Vehicular Traffic

The thickness of the line delineates the amount of traffic on each road. The thicker the line the more heavily it is traveled.



## Soil Analysis

Ryell very fine sandy loam  
0 to 2 percent slope

Soil Order: Entisols  
Suborder: Fluvents  
Great Group: Ustifluvents  
Subgroup: Aridic Ustifluvents  
Family

Particle Size: Coarse-Loamy  
Over Sandy  
Mineralogy: Mixed  
CEC Activity: Superactive  
Soil Temperature: Frigid

Elevation: 1,900 to 6,000 feet  
Frost-free period: 110 to 135 days

Down-slope shape: Linear  
Across-slope shape: Linear  
Parent material: Sandy alluvium  
Drainage class: Well drained  
Depth to water table: >80 inches  
Frequency of flooding: Rare  
Frequency of ponding: None

Yamacall loam  
0 to 2 percent slopes

Soil Order: Inceptisols  
Suborder: Ustepts  
Great Group: Haplustepts  
Subgroup: Aridic Haplustepts  
Family

Particle Size: Fine-Loamy  
Mineralogy: Mixed  
CEC Activity: Superactive  
Soil Temperature: Frigid

Elevation: 1,900 to 4,500 feet  
Frost-free period: 110 to 135 days

Down-slope shape: Linear  
Across-slope shape: Linear  
Parent material: Loamy alluvium  
Drainage class: Well drained  
Depth to water table: > 80 inches  
Frequency of flooding: None  
Frequency of ponding: None

[76]

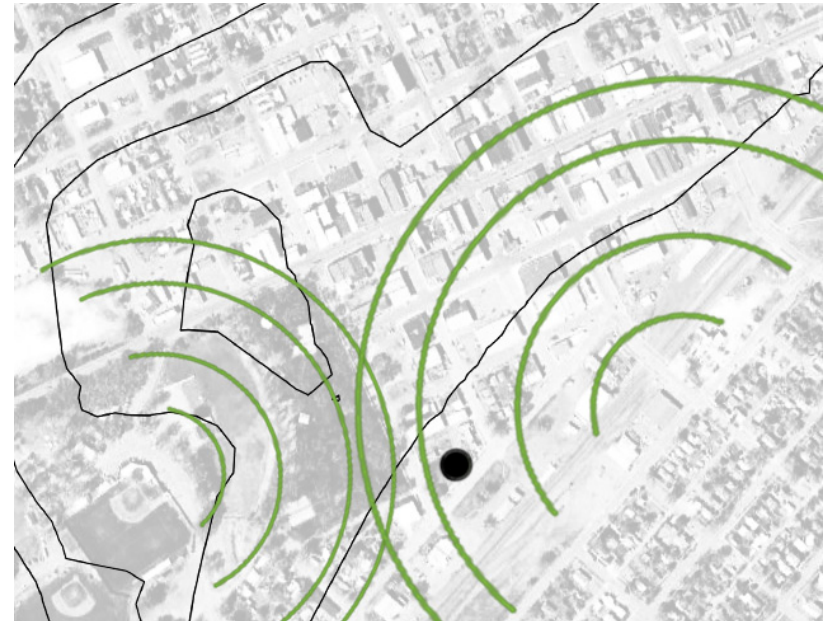
## Air Movement, Shading


Air movement on the site is directly linked to the prevailing winds that rush over the city. The park to the west provides some shelter from the northwest winds in the summer, but the site is fully exposed to the southern winter winds. Two-story and one-story buildings cover the site, having little to no effect on the flow of wind on the site.



## Noise

Noise surrounds the site from several sides with train tracks to the southeast and playing fields and a park to the west. The train tracks behind the depot are still in regular use, flooding the site with irregular clatter. The noise of children playing in the park, celebrations from the small gazebo, and cheers from fans at the playing field also rush over the site daily.



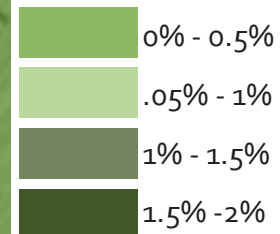


## Site Character: slope analysis and erosion

The site is very flat (0-2% slope)

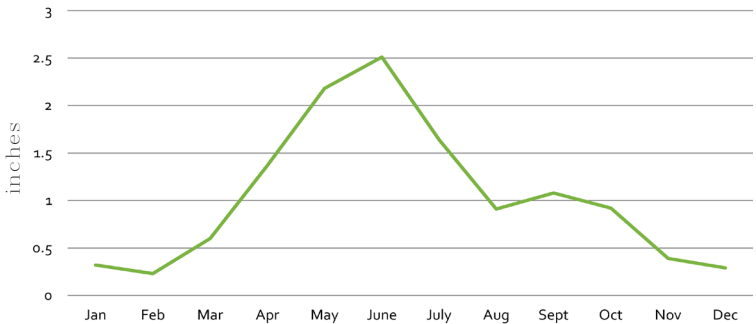
Although deserted and still owned by Burlington Northern, the site of the train depot is upkept to a certain degree with no signs of erosion as the depot is left to deteriorate. Across the street, trees, plants and weeds grow wildly and the sidewalk disappears being chipped away slowly from the elements, pedestrian traffic, and old age.

[78

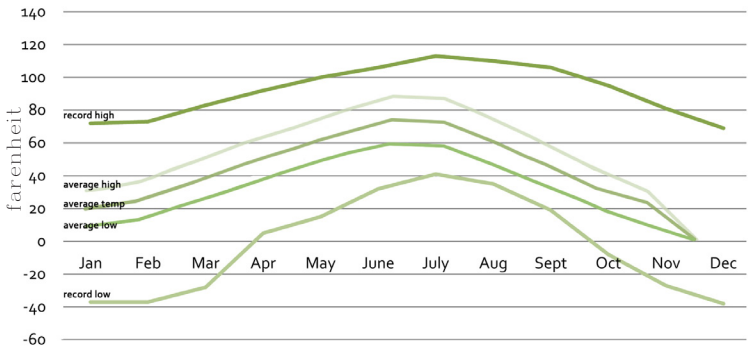


[site analysis]

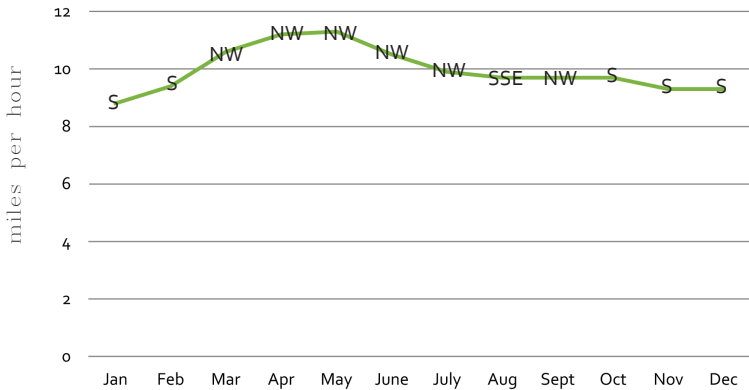
# Average Precipitation



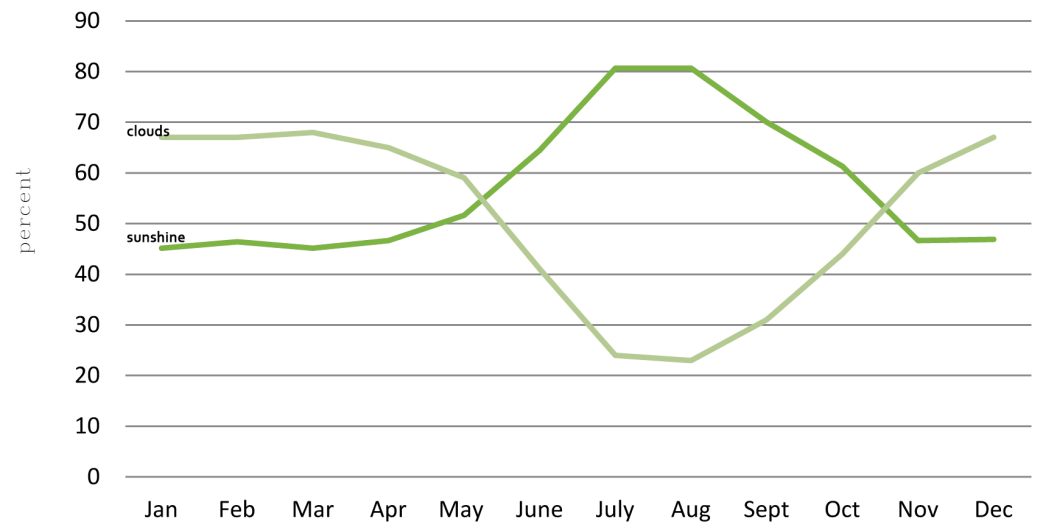
# Temperature



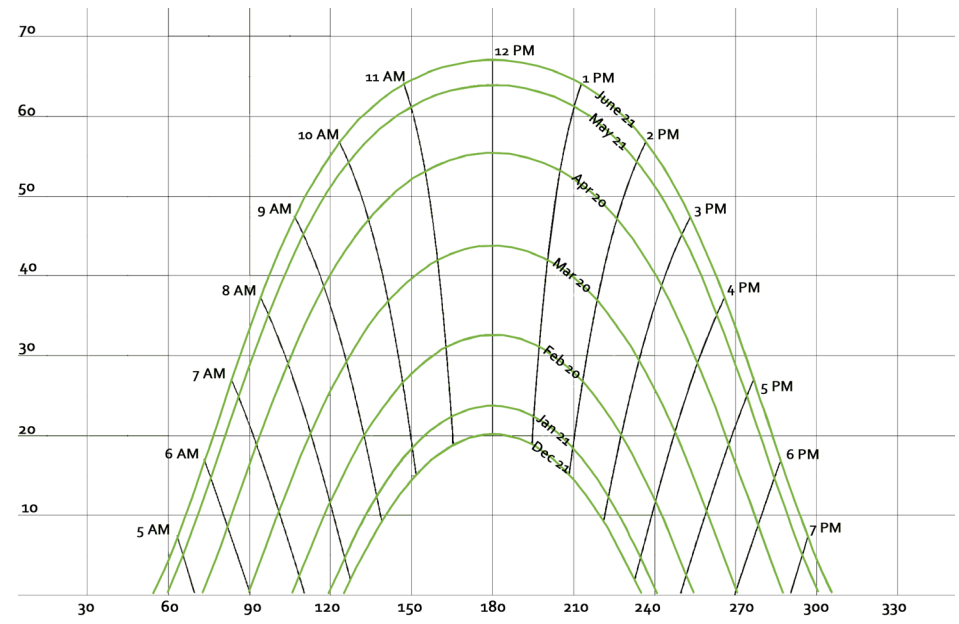
# Wind Speed and Direction



# Sunshine and Cloudiness



# Sun Path



[80



81]

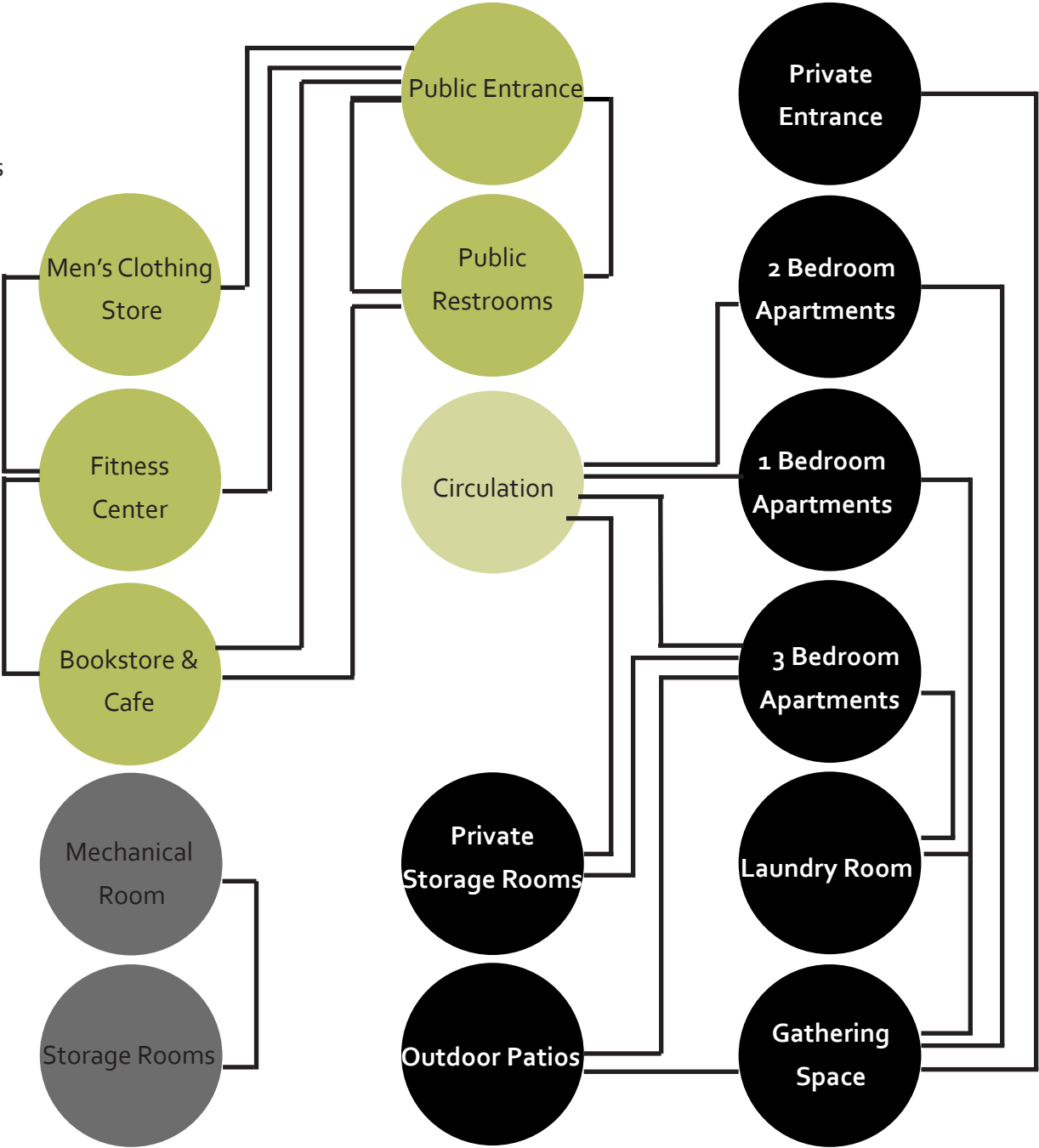
[program]

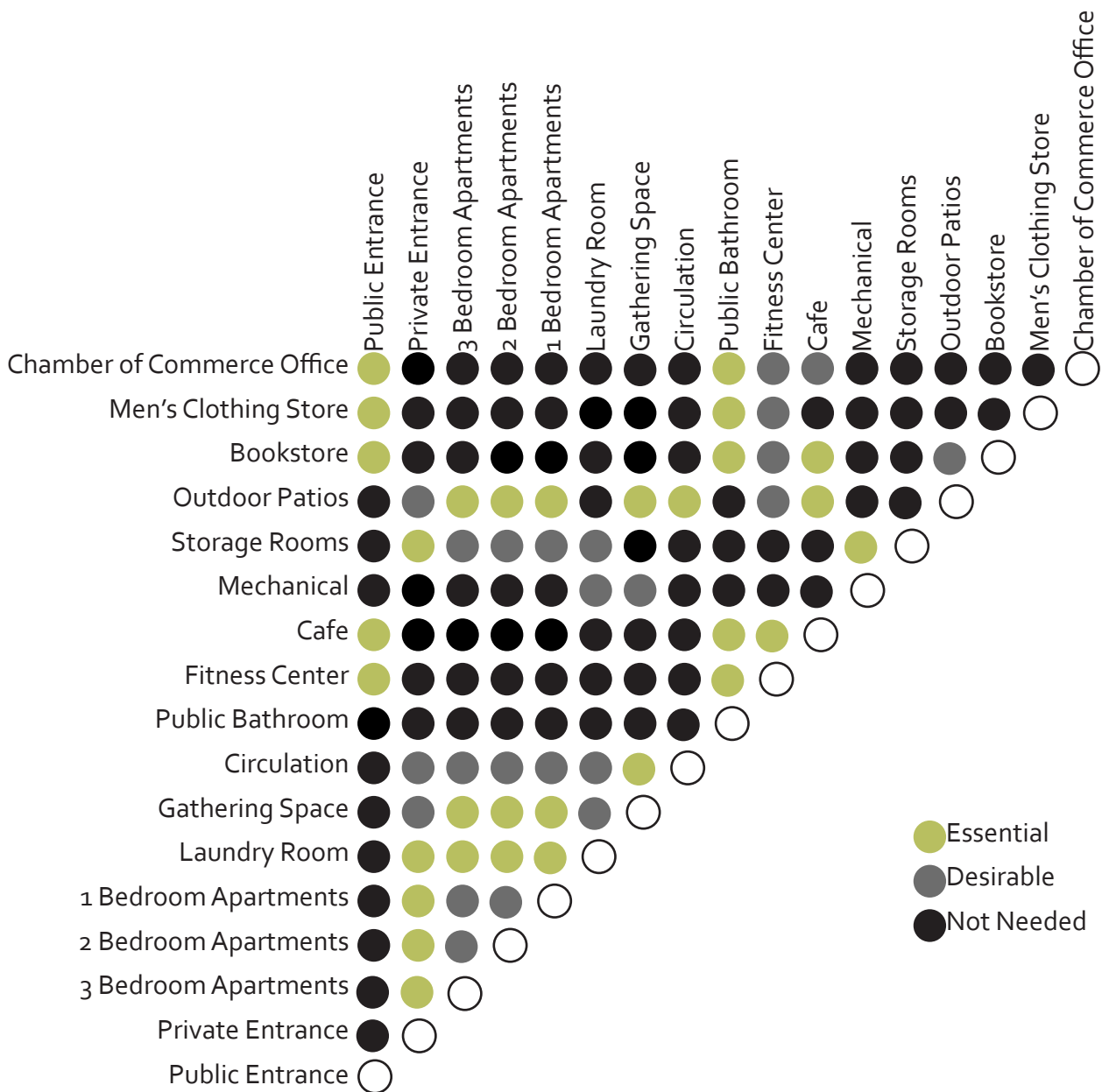
---



Public Entrance	
Private Entrance	
(3) Two-Bedroom Apartment	2172
(2)Bedroom	12'x12'
Bathroom	8'x6'
Kitchen	10'x10'
Total Storage	8'x8'
Living/	
Dining Room	14'x 16'
(3) Three-Bedroom Apartment	3156
Master Suite	16x18
(2)Bedroom	12'x12'
Bathroom	8x6
Kitchen	10'x10'
Total Storage	12'x12'
Living/	
Dining Room	14'x 16'
(3) One-Bedroom Apartment	1596
Bathroom	8x6
Kitchen	10'x10'
Total Storage	8'x8'
Living/	
Dining Room	20'x 16'
Private Gathering Space	12' x 12'
24 Hour Fitness Center	130'x60'
Cafe/Bookstore	40'x30'
Men's Clothing Store	40'30'
(14) On-Site Parking	
Total	30,000

- Private Spaces
- Equipment Spaces
- Public Spaces





85]

[references]

---



- American Institute of Architects.(2009, Feb 26). Retrieved from the AIA wiki: <http://wiki.aia.org/Wiki%20Pages/Construction%20Waste%20Management.aspx>
- Allison, A. (2010, April). Northern pacific railway depot. *National Register of Historic Places Registration Form*.
- Buildings Overview (2009, May) In *Climate TechBook online*. Retrieved from <http://www.czes.org/technology/overview/buildings>
- Buildings Sector. (2011 March). In *Buildings Data Book online*. Retrieved from <http://buildingsdatabook.eren.doe.gov/ChapterIntro1.aspx>
- Burden, E. 2004. *Illustrated dictionary of architectural preservation*. New York, NY: McGraw-Hill
- Dickenson, R. E. (1983, September 26) Archeology and historic preservation: Secretary of the interior's standards and guidelines. Retrieved from [http://www.nps.gov/history/local-law/arch\\_stnds\\_10.htm](http://www.nps.gov/history/local-law/arch_stnds_10.htm)
- Frey, P. (2008 September). *Building reuse: Finding a place on american climate policy agendas*. Retrieved from [http://www.preservationnation.org/issues/sustainability/additional-resources/building\\_reuse.pdf](http://www.preservationnation.org/issues/sustainability/additional-resources/building_reuse.pdf)
- Gordon, S. (1918). The vigilante days. *Recollections of Old Milestown*. Retrieved from <http://milescity.com/history/books/room/part3.asp>
- Hiles, D. (1996 August 16). Cultural psychology and the centre-ground of psychology. Retrieved from <http://www.psy.dmu.ac.uk/drhiles/CPpaper.htm>
- Kolleeny, J. F.(2008, Oct). Gentry Library, Gentry, Arkansas. *Architectural Record*. 196, 138-143.
- Langston, C. *Green Adaptive Reuse: Issues and strategies for the built environment*. (Unpublished doctoral dissertation). Mirvac School of Sustainable Development, Bond University, Gold Coast, Australia
- Langston, C.(2007) Strategic assessment of building adaptive reuse opportunities in Hong Kong. *Building and Environment*,43(10) Retrieved from <http://www.sciencedirect.com/science/article/pii/S036013230700203X>
- Mcknight, J. M., (2011, Feb). 990 Offices. *Architectural Record*. 199, 66-69.
- Miles City Daily Star, January 18, 1924

87]

Miles City, MT Year to Date Summary (2011) National Weather Service Forecast Office [Data File]. Retrieved from [http://www.wrh.noaa.gov/byz/climate/annsum\\_mls.php](http://www.wrh.noaa.gov/byz/climate/annsum_mls.php)

Murtagh, W.J. (2006) Keeping time: The history and theory of preservation in america. Hoboken, NJ: John Wiley & Sons Inc

National Resources Conservation Service. (2010) [List Soil Classifications] Soil Classification from USDA-NRCS Soil Survey Division. Retrieved from <http://soils.usda.gov/technical/classification/scfile/index.html>

National Resources Conservation Services. [Map illustration soil survey] Miles City Soil Survey from Web Soil Survey. Retrieved from <http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>

National Weather Service. (2011). [Interactive dashboard for temp, humidity, wind, cloud]. Miles City Municipal Airport Averages. Retrieved from <http://weatherspark.com/#!/dashboard;ws=30911;to=1/1;t1=12/31;graphs=humidity:1>

Pearson, C. A, (2010, July). A private development plays good neighbor by creating a new public park as well as 11 snazzy duplexes. Architectural Record. 198. Retrieved from [http://archrecord.construction.com/projects/bts/archives/multifamhousing/10\\_Formosa\\_1140/](http://archrecord.construction.com/projects/bts/archives/multifamhousing/10_Formosa_1140/)

Stearns, P.N. (1998). Why study history. Retrieved from <http://www.historians.org/pubs/free/WhyStudyHistory.htm>

Tyler, N. (2000.) Historic Preservation: An introduction to its history, principles, and practice. New York, NY: W.W. Norton & Company

Wehner, P. (2011, June 15). The Importance of History. Commentary. Retrieved from <http://www.commentarymagazine.com/2011/06/15/the-importance-of-history/>

NSTATE. (2011, July 14). Montana: The geography of Montana. Retrieved from [http://www.netstate.com/states/geography/mt\\_geography.htm](http://www.netstate.com/states/geography/mt_geography.htm)

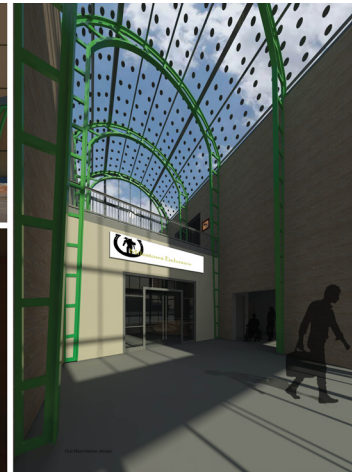
(2008 Jan 6). Sustainability Initiative. National Trust for Historic Preservation. Retrieved from <http://www.preservationnation.org/issues/sustainability>

(2011). Community Revitalization. National Trust for Historic Preservation. Retrieved from <http://www.preservationnation.org/issues/community-revitalization/community-revitalization.html>

89]

[appendix A]

---



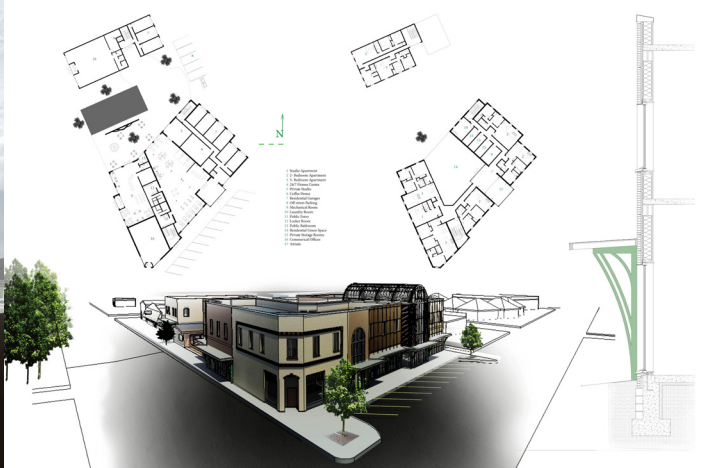
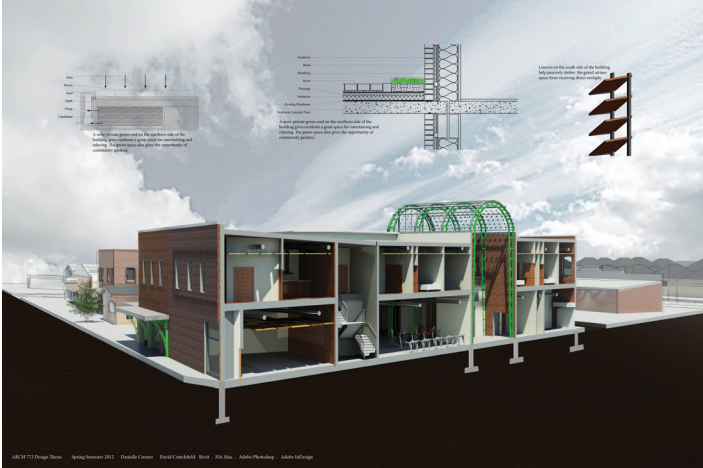
## Preserving our History

How can historic preservation work in collaboration with energy efficient technologies to influence the renovation of a neighborhood?



Historic preservation has been on the rise in recent years protecting and embracing the heritage of a place. However, today it is also used as a means of sustainability. Renewing, restoring or preserving the built infrastructure on a site rapidly reduces the amount of waste that has begun to fill our landfills. Reversing the infrastructure that is already present within a community allowing things to be brought back to its neighborhood, which might have been forgotten.

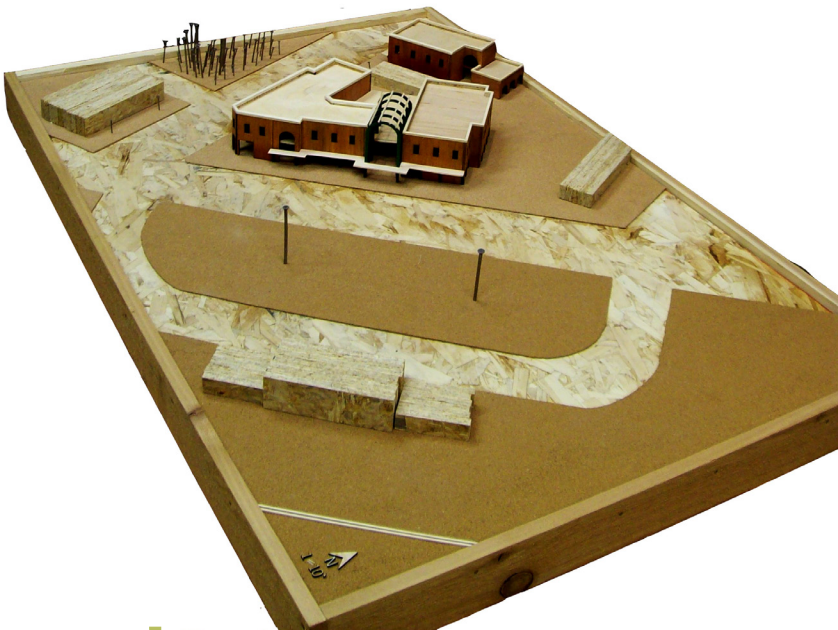
This project focuses on the integration of green design strategies and historical preservation for the purpose of restoring neighborhoods within our city limits. By integrating green design strategies and energy efficient design into the practice of historic preservation, the life span of a building can be extended. By preserving these buildings life is brought back to its site, allowing historic preservation to act as a catalyst for the rehabilitation of its surrounding neighborhoods.



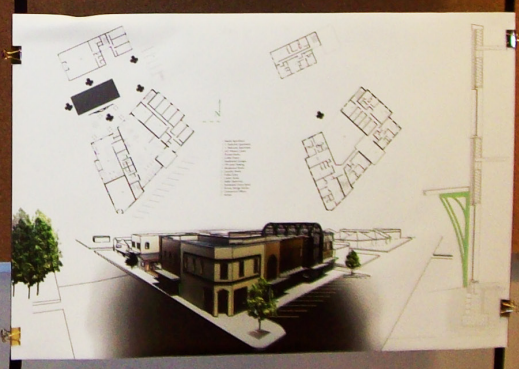
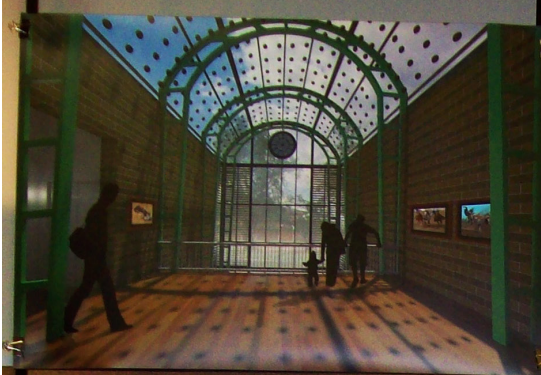


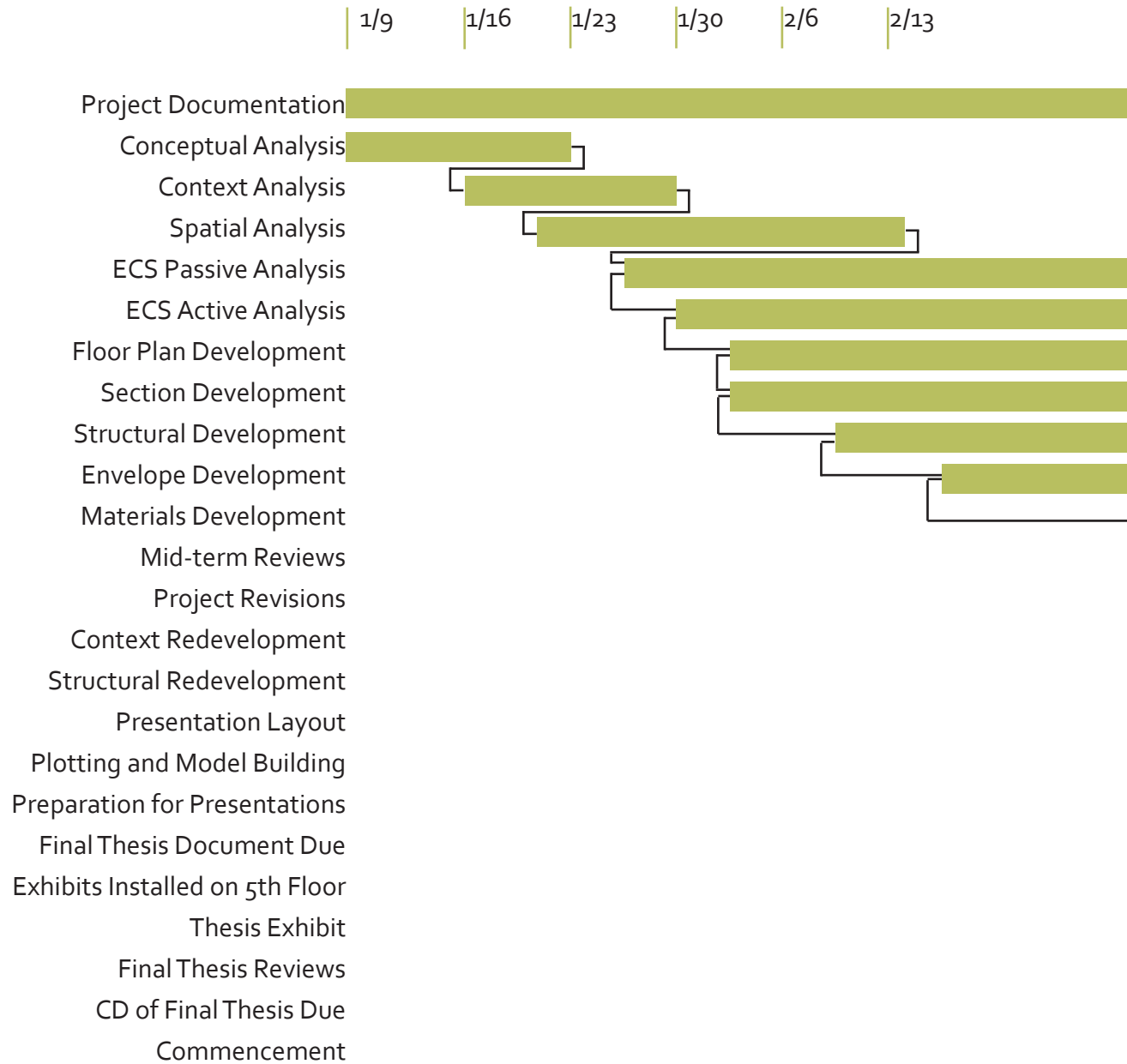


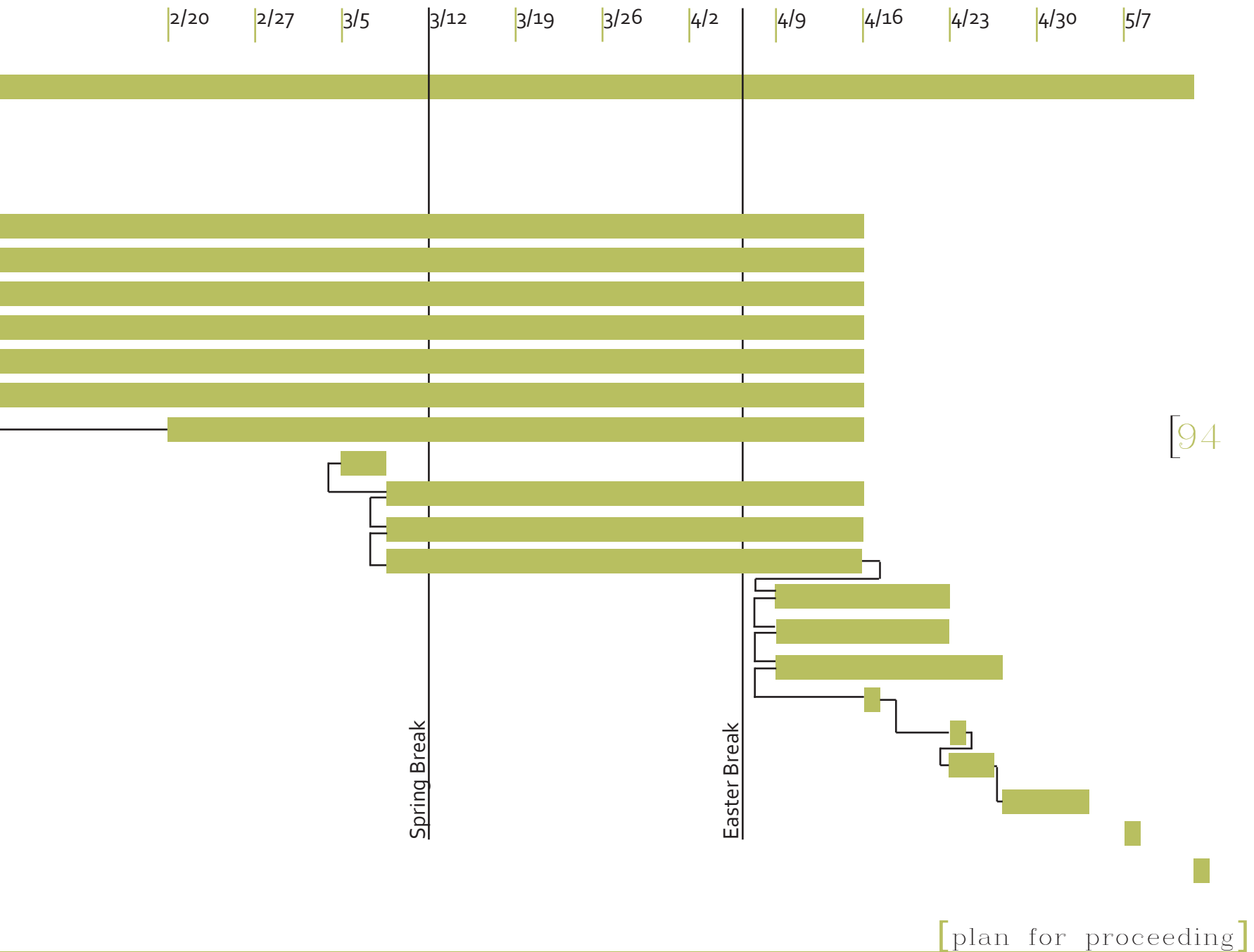
91]















"You only live once, but  
if you do it right, once  
is enough." - Mae West

[95

Danielle Cremer  
102 Lynam Drive  
Miles City MT 59301  
(406) 951-8401  
danielle.cremer@my.ndsu.edu

